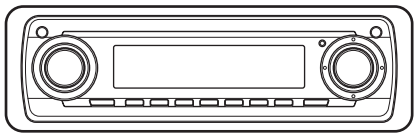
Pioneer sound.vision.soul

Service Manual



DEH-P8600MP/XN/EW

ORDER NO.
CRT3218

MULTI-CD/DAB CONTROL DSP HIGH POWER CD/MP3/WMA PLAYER WITH RDS TUNER

DEH-P8600MP/XN/EW

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3098	CRT3179	S10WMAcode2	CD Mech. Module:Circuit Description, Mech. Description, Disassembly

For details, refer to "Important symbols for good services".

MC-Service

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
ⓒ**PIONEER CORPORATION 2004**

K-ZZD.MAR. 2004 printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

1. Safety Precautions for those who Service this Unit.

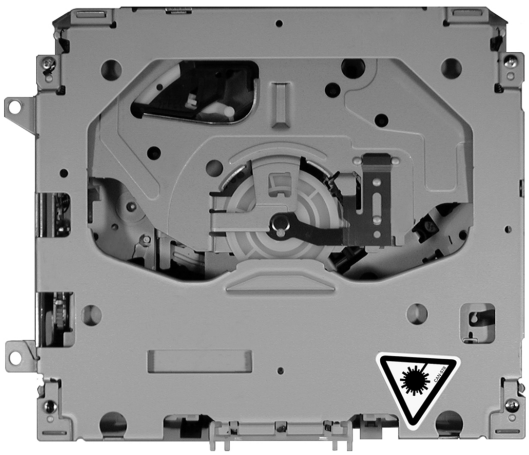
- **When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

Caution:

1. **During repair or tests, minimum distance of 13cm from the focus lens must be kept.**
2. **During repair or tests, do not view laser beam for 10 seconds or longer.**

2. A "CLASS 1 LASER PRODUCT" label is affixed to the bottom of the player.

3. The triangular label is attached to the mechanism unit frame.



4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.
Wavelength = 800 nanometers

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replaced only with the same or equivalent type recommended by the manufacture.
Discord used batteries according to the manufacture's instructions.

● CD Section Precaution

1. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
2. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY" on page 58.
3. After replacing the pickup unit, be sure to check the grating. (See p.54.)

[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

MC-Service

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1. SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption
..... 10.0 A

Backup current ..... 5 mA or less

Dimensions (W × H × D):
DIN
Chassis ..... 178 × 50 × 159 mm
Nose ..... 188 × 58 × 29 mm
D
Chassis ..... 178 × 50 × 164 mm
Nose ..... 170 × 45 × 24 mm
Weight ..... 1.6 kg

Audio/DSP

Maximum power output ..... 50 W × 4
Continuous power output ... 27 W × 4 (DIN 45324, +B=14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout max output level/output impedance
..... 6.5 V/100 Ω
Loudness contour ..... +10 dB (100 Hz), +6.5 dB (10 kHz) (volume: –30 dB)
Equalizer (13-Band Graphic Equalizer):
Frequency ..... 50/80/125/200/315/500/800 Hz
1.25/2/3.15/5/8/12.5 kHz
Equalization range ..... ±12 dB
Auto equalizer (just for standard mode):
(Front & rear & subwoofer 13 band graphic)
Frequency ..... 50/80/125/200/315/500/800 Hz
1.25/2/3.15/5/8/12.5 kHz
Equalization range ..... +6 – –12 dB
Network (standard mode):
HPF (Front/rear):
Frequency ..... 50/63/80/100/125/160/200 Hz
Slope ..... 0 (Pass)/–6/–12 dB/oct
Gain ..... 0 – –24 dB/Mute
Subwoofer:
Frequency ..... 50/63/80/100/125/160/200 Hz
Slope ..... –6/–12/–18 dB/oct
Gain ..... +6 – –24 dB/Mute
Phase ..... Normal/Reverse
Network (3-way network mode):
High HPF:
Frequency ..... 1.6/2/2.5/3.15/4/5/6.3/8/10/12.5/16 kHz
Slope ..... –6/–12/–18/–24 dB/oct
Gain ..... 0 – –24 dB/Mute
Phase ..... Normal/Reverse

Mid HPF/LPF:
Frequency (LPF) ... 1.6/2/2.5/3.15/4/5/6.3/8/10/12.5/16 kHz
Frequency (HPF)
..... 31.5/40/50/63/80/100/125/160/200 Hz
Slope ..... 0 (Pass)/–6/–12/–18/–24 dB/oct
Gain ..... 0 – –24 dB/Mute
Phase ..... Normal/Reverse
Low LPF:
Frequency ..... 31.5/40/50/63/80/100/125/160/200 Hz
Slope ..... –12/–18/–24/–30/–36 dB/oct
Gain ..... +6 – –24 dB/Mute
Phase ..... Normal/Reverse

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format:
Sampling frequency ..... 44.1 kHz
Number of quantization bits
..... 16; linear
Frequency characteristics ... 5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 100 dB (1 kHz) (IEC-A network)
Dynamic range ..... 95 dB (1 kHz)
Number of channels ..... 2 (stereo)
MP3 decoding format ..... MPEG-1 & 2 Audio Layer 3
WMA decoding format ..... Ver. 7, 7.1, 8, 9 (2ch audio)
WAV signal format ..... Linear PCM & MS ADPCM

FM tuner

Frequency range ..... 87.5 – 108.0 MHz
Usable sensitivity ..... 8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio ..... 75 dB (IEC-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 45 dB (at 65 dBf, 1 kHz)
Selectivity ..... 80 dB (±200 kHz)

MW tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IEC-A network)

LW tuner

Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 30 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IEC-A network)

Note

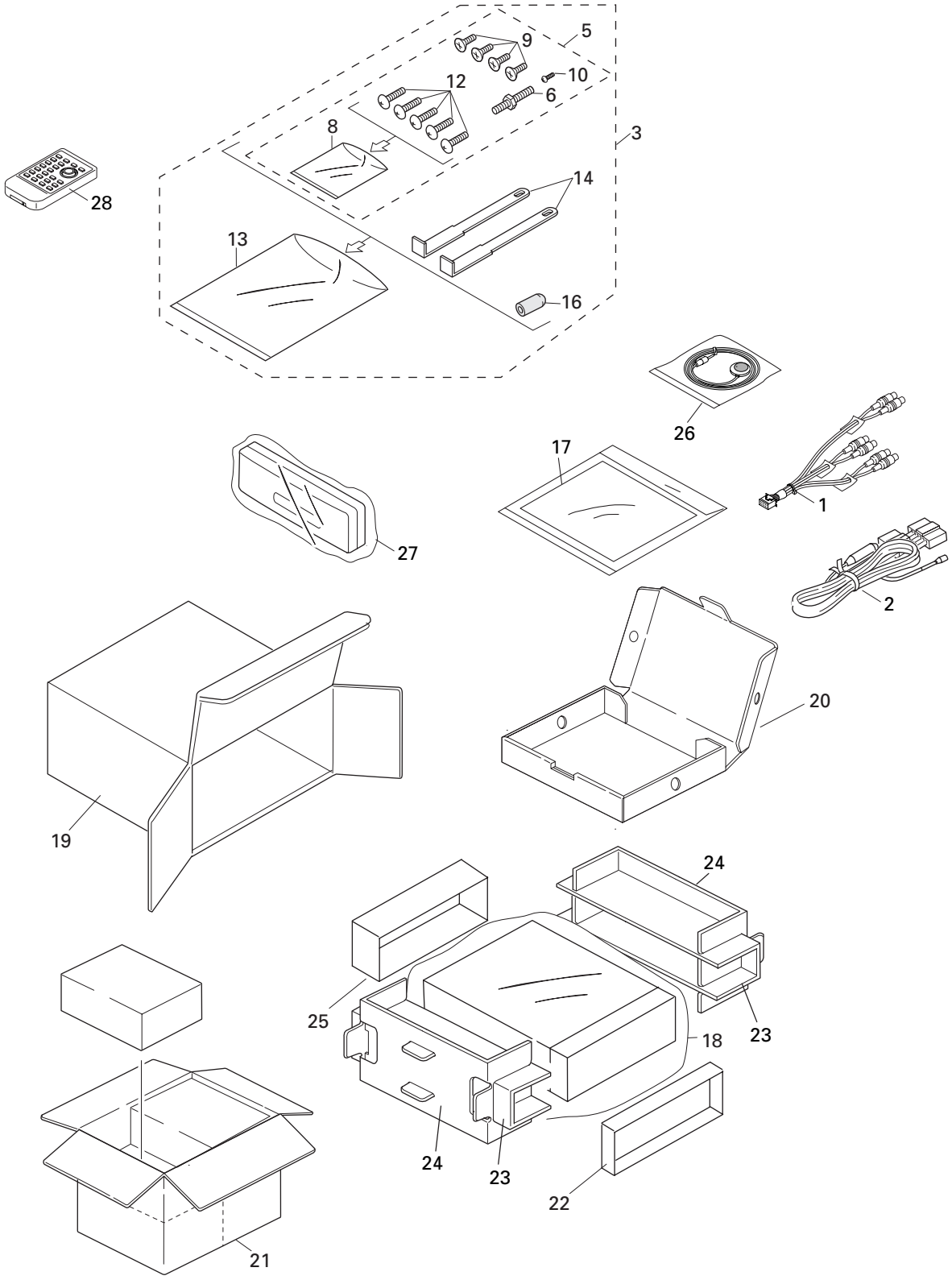
Specifications and the design are subject to possible modifications without notice due to improvements. ■

MC-Service

2. EXPLODED VIEWS AND PARTS LIST

*NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.*
• Screw adjacent to ▽ mark on the product are used for disassembly.
• For the applying amount of lobricants or glue, follow the instructions in this manual.
(In the case of no amount instructions,apply as you think it appropriate.)

2.1 PACKING



PACKING SECTION PARTS LIST

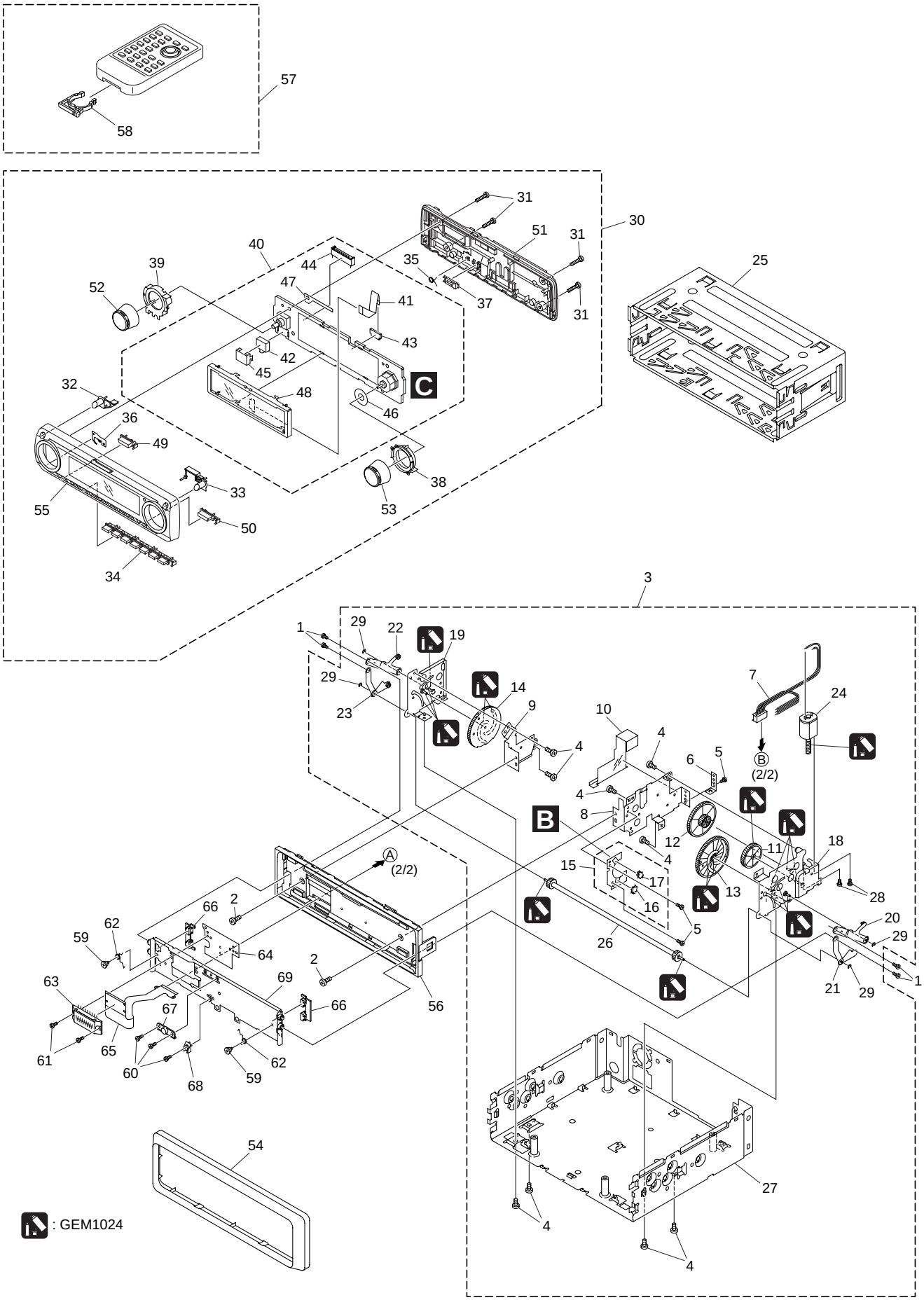
Mark	No.	Description	Part No.
	1	Cord Assy	CDE7436
	2	Cord Assy	CDE6562
	3	Accessory Assy	CEA4326
	4	•••••	
	5	Screw Assy	CEA4327
	6	Screw	CBA1650
	7	•••••	
*	8	Polyethylene Bag	CEG-127
	9	Screw	CRZ50P090FTC
	10	Screw	JPZ20P060FZK
	11	•••••	
	12	Screw	TRZ50P080FTC
*	13	Polyethylene Bag	CEG-158
	14	Handle	CNC5395
	15	•••••	
	16	Bush	CNV3930
	17-1	Polyethylene Bag	CEG1116
	17-2	Owner's Manual	CRD3824
	17-3	Owner's Manual	CRD3825
	17-4	Owner's Manual	CRD3826
	17-5	Installation Manual	CRD3827
*	17-6	Causion Card	CRP1308
*	17-7	Passpoert	CRY1013
*	17-8	Warranty Card	CRY1157
	18	Polyethylene Bag	CEG-162
	19	Carton	CHG5191
	20	Sub Carton	CHG5195
	21	Contain Box	CHL5191
	22	Protector	CHP2546
	23	Protector	CHP2797
	24	Protector	CHP2798
	25	Protector	CHP2812
	26	Microphone Assy	CPM1054
	27	Case Assy	CXB3520
	28	Remote Control Unit	CXC2665

Owner's Manual,Installation Manual

Part No.	Language
CRD3824	English, Spanish
CRD3825	German, French
CRD3826	Italian, Dutch
CRD3827	English, Spanish, German, French, Italian, Dutch

2.2 EXTERIOR(1)

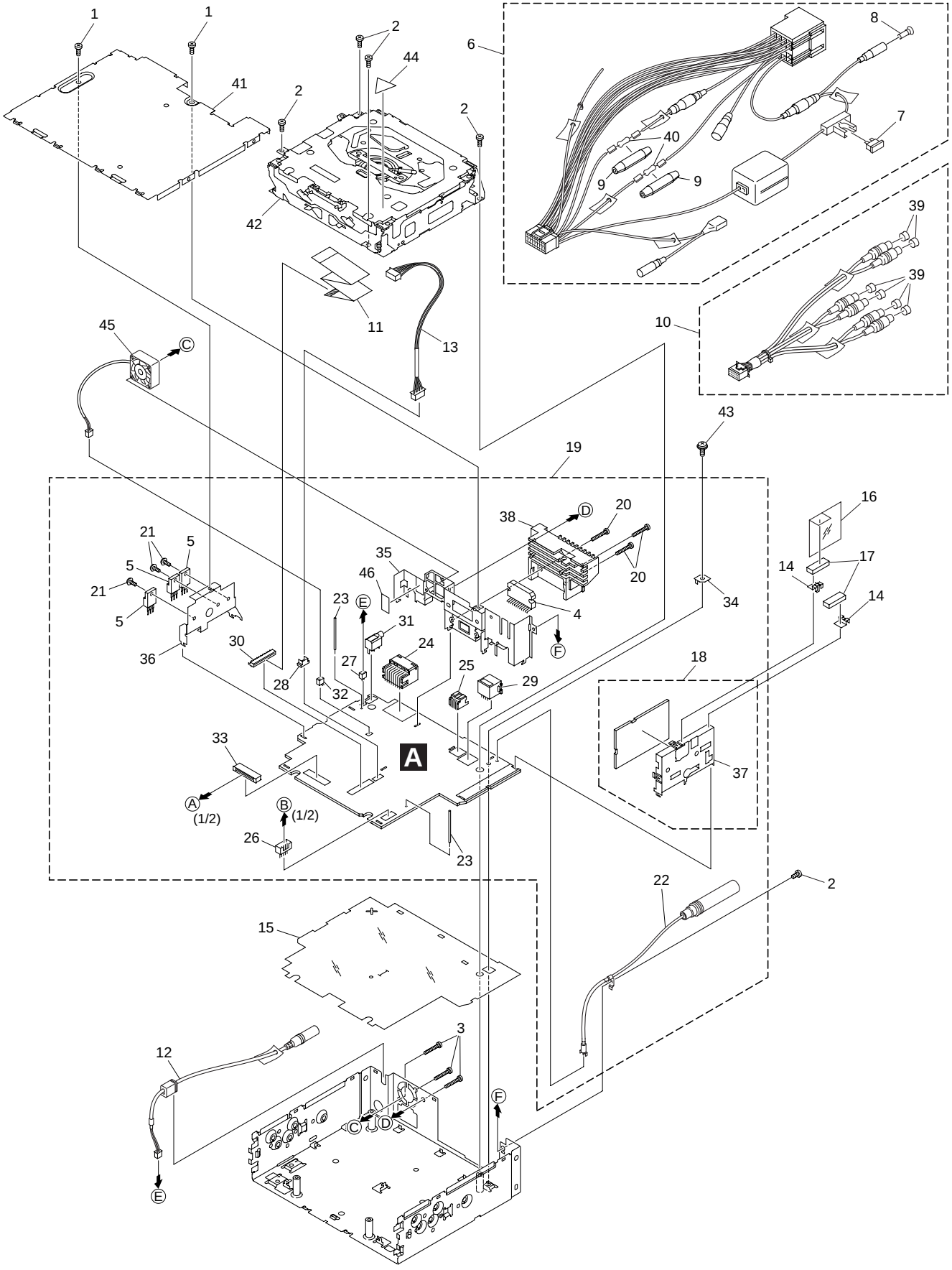
MC-Service



EXTERIOR(1) SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw(M2x2.5)	CBA1641
2	Screw(M2.6x4)	CBA1769
3	Drive Unit	CXC2207
4	Screw	BMZ26P040FTC
5	Screw	CBA1633
6	Spring	CBL1632
7	Cord	CDE7392
8	Holder	CND1848
9	Holder	CND1850
10	Insulator	CNM8797
11	Gear	CNV7752
12	Gear	CNV7753
13	Gear	CNV7754
14	Gear	CNV7755
15	Switch Unit	CWS1389
16	Switch(S1)	CSN1051
17	Spring Switch(S2)	CSN1052
18	Holder Unit	CXC2196
19	Holder Unit	CXC2197
20	Arm Unit	CXC2198
21	Arm Unit	CXC2199
22	Arm Unit	CXC2200
23	Arm Unit	CXC2201
24	Motor Unit(M571)	CXC2204
25	Holder	CNC8659
26	Gear Unit	CXC2205
27	Chassis Unit	CXC2673
28	Screw	JFZ20P025FTC
29	Washer	YE15FTC
30	Detach Grille Assy	CXC2568
31	Screw	BPZ20P090FZK
32	Button(OPEN)	CAC8459
33	Button(RESET)	CAC8460
34	Button(1-6)	CAC8919
35	Spring	CBH2543
36	Holder	CND2039
37	Arm	CNV6963
38	Lighting Conductor	CNV7974
39	Lighting Conductor	CNV7975
40	Keyboard Unit	CWM9270
41	Flat Cable	CDE7591
42	Jack(CN1902)	CKN1016
43	Connector(CN1802)	CKS4792
44	Connector(CN1903)	CKS4795
45	Holder	CND1971
46	Sheet	CNM8658
47	Sheet	CNM9192
48	OEL Module	MXK8200
49	Button Unit(EQ)	CXC2684
50	Button Unit(BAND/ESC)	CXC2685
51	Cover Unit	CXC2997
52	Knob Unit	CXC3698
53	Knob Unit	CXC3699
54	Panel	CNS7795
55	Sub Grille Assy	CXC3702
56	Panel Unit	CXC2603
57	Remote Control Unit	CXC2665
58	Cover	CZN5357
59	Screw(M2x2)	CBA1561
60	Screw(M2x2)	CBA1633
61	Screw(M2x3.5)	CBA1754
62	Spring	CBH2530
63	Connector	CKS4796
64	Holder	CND2172
65	Flexible PCB	CNP7698
66	Arm	CNV6962
67	Guide	CNV6967
68	Guide	CNV8048
69	Case Unit	CXC2202

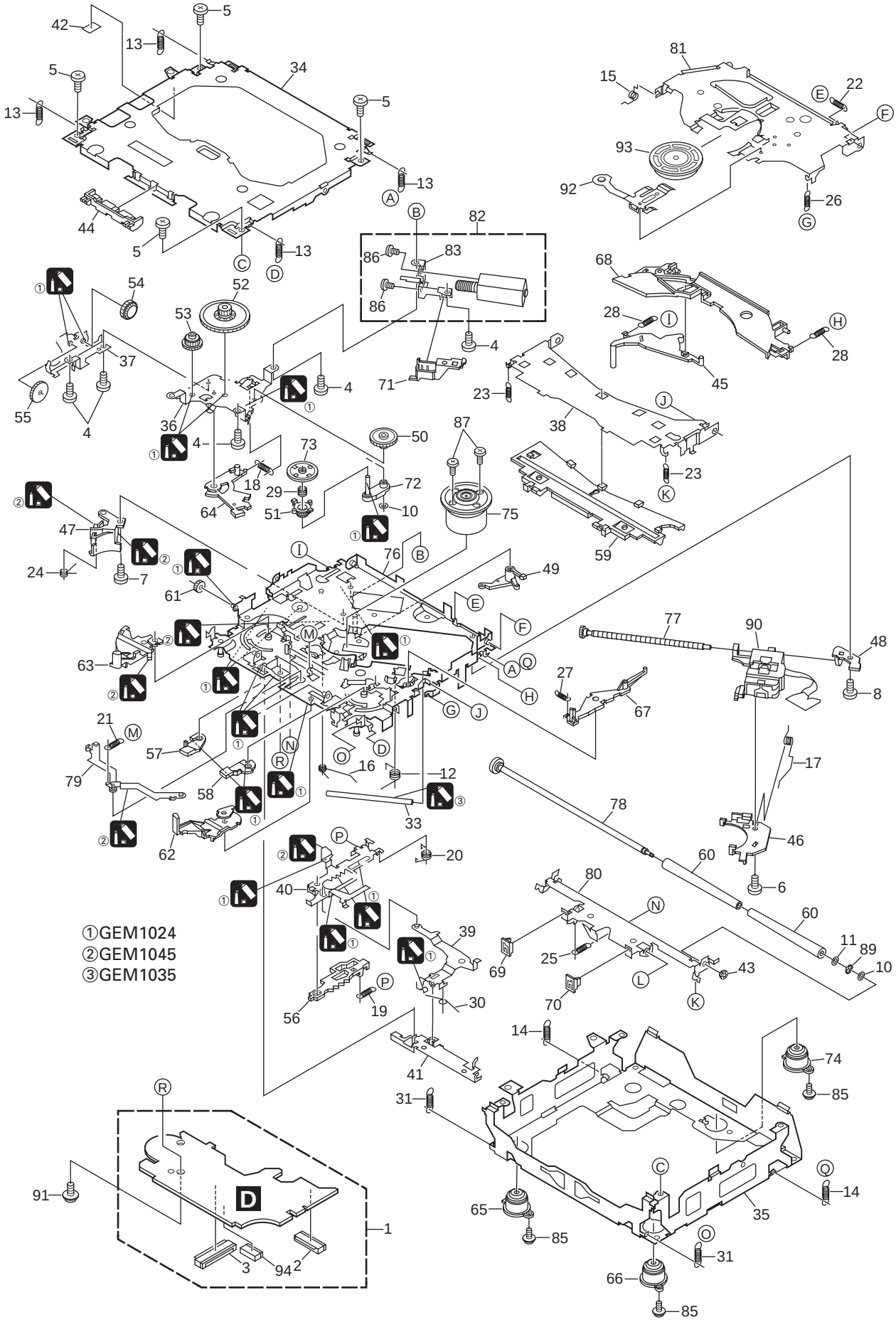
2.3 EXTERIOR(2)



EXTERIOR(2) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ26P060FZK
	2	Screw	BSZ26P060FTC
	3	Screw(M2.6x14)	CBA1632
	4	IC(IC301)	PAL007A
	5	Transistor(Q742,861,871)	2SD2396
	6	Cord Assy	CDE6562
	7	Fuse(10A)	CEK1136
	8	Terminal Cover	CKX-003
	9	Cap	CNS1472
	10	Cord Assy	CDE7436
	11	Flat Cable	CDE7468
	12	Cord Assy	CDE7470
	13	Cord Assy	CDE7626
	14	Earth Plate	CND2171
	15	Insulator	CNM8659
	16	Insulator	CNM8790
	17	Cushion	CNM9126
	18	FM/AM Tuner Unit	CWE1645
	19	Tuner Amp Unit	CWM9265
	20	Screw	BMZ26P200FTC
	21	Screw	BSZ26P080FTC
	22	Antenna Cable(CN402)	CDH1336
	23	Clamper	CEF1033
	24	Plug(CN932)	CKM1278
	25	Connector(CN351)	CKM1389
	26	Plug(CN571)	CKS-786
	27	Plug(CN541)	CKS1035
	28	Connector(CN702)	CKS3126
	29	Connector(CN101)	CKS3408
	30	Connector(CN701)	CKS3837
	31	Connector(CN931)	CKS4124
	32	Connector(CN561)	CKS4571
	33	Connector(CN801)	CKS4811
	34	Holder(CN401)	CNC5399
	35	Holder	CND2040
	36	Holder	CND2041
	37	Holder	CND1054
	38	Heat Sink	CNR1729
	39	Cap	CNV6727
	40	Resistor	RS1/2PMF102J
	41	Case Unit	CXC3476
	42	CD Mechanism Module(S10CODE)	CXK5677
	43	Screw	ISS26P055FTC
	44	Label	VRW-329
	45	Fan Motor(M561)	CXM1288
	46	Sheet	CNM8789

2.4 CD MECHANISM MODULE



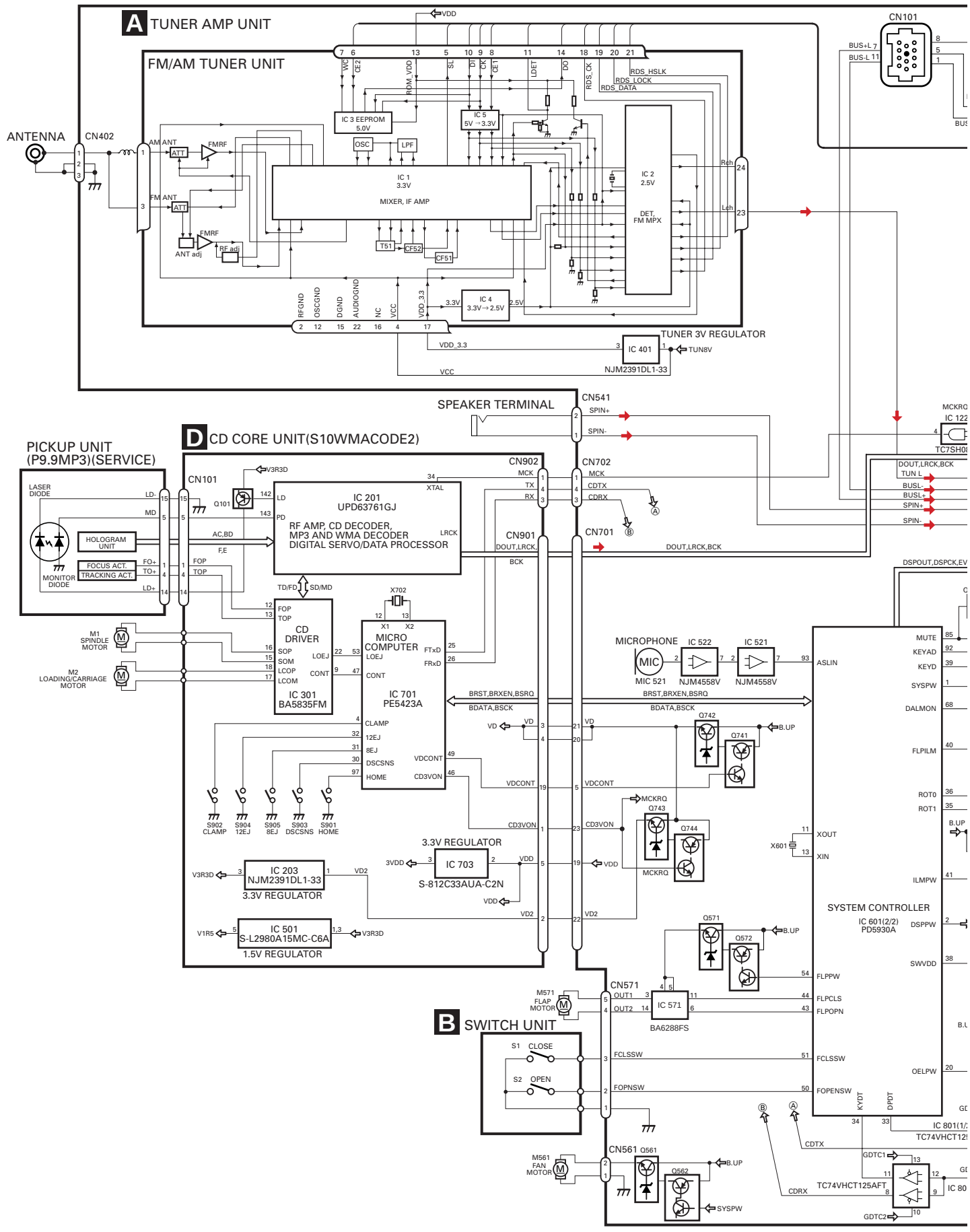
CD MECHANISM MODULE PARTS LIST

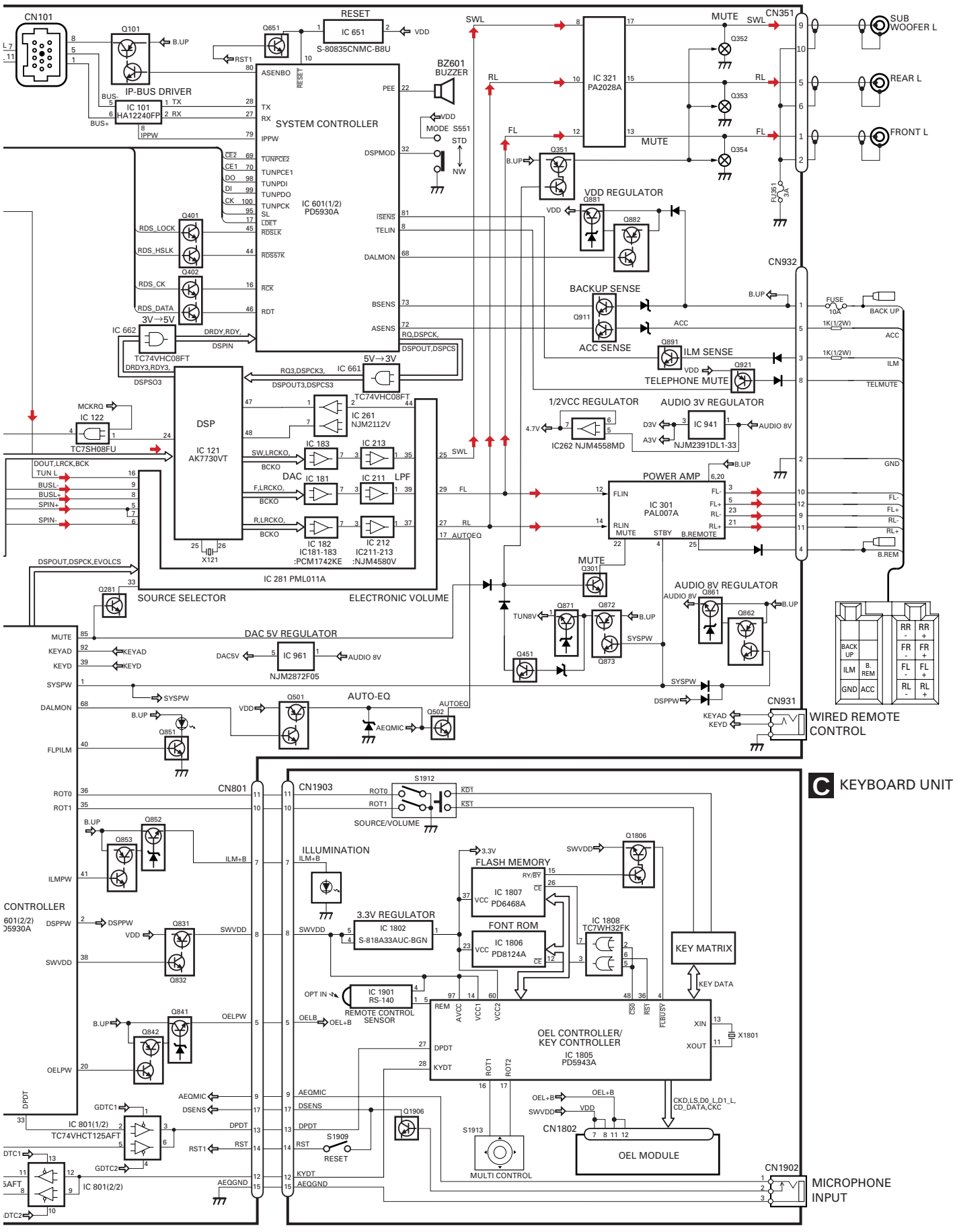
Mark	No.	Description	Part No.
	1	CD Core Unit(S10WMACODE2)	CWX2953
	2	Connector(CN101)	CKS4182
	3	Connector(CN901)	CKS4017
	4	Screw	BMZ20P035FTC
	5	Screw	BSZ20P040FTC
	6	Screw(M2x4)	CBA1362
	7	Screw(M2x3)	CBA1511
	8	Screw(M2x3)	CBA1527
	9	•••••	
	10	Washer	CBF1038
	11	Washer	CBF1060
	12	Spring	CBH2390
	13	Spring	CBH2606
	14	Spring	CBH2607
	15	Spring	CBH2608
	16	Spring	CBH2609
	17	Spring	CBH2610
	18	Spring	CBH2735
	19	Spring	CBH2612
	20	Spring	CBH2613
	21	Spring	CBH2614
	22	Spring	CBH2615
	23	Spring	CBH2616
	24	Spring	CBH2617
	25	Spring	CBH2620
	26	Spring	CBH2621
	27	Spring	CBH2641
	28	Spring	CBH2642
	29	Spring	CBH2643
	30	Spring	CBH2659
	31	Spring	CBH2688
	32	•••••	
	33	Shaft	CLA4441
	34	Frame	CNC9962
	35	Frame	CNC9963
	36	Bracket	CNC9966
	37	Bracket	CND1895
	38	Arm	CNC9968
	39	Arm	CND1909
	40	Lever	CND2032
	41	Lever	CNC9984
	42	Sheet	CNM8134
	43	Collar	CNV7798
	44	Guide	CNV7799
	45	Arm	CNV7800
	46	Rack	CNV7199
	47	Holder	CNV7201
	48	Holder	CNV7202
	49	Arm	CNV7203
	50	Gear	CNV7207
	51	Gear	CNV7208
	52	Gear	CNV7209
	53	Gear	CNV7210
	54	Gear	CNV7211
	55	Gear	CNV7212
	56	Rack	CNV7214
	57	Arm	CNV7215
	58	Arm	CNV7216
	59	Guide	CNV7217
	60	Roller	CNV7218
	61	Gear	CNV7219
	62	Arm	CNV7221
	63	Arm	CNV7220
	64	Arm	CNV7222
	65	Damper	CNV7313
	66	Damper	CNV7314
	67	Arm	CNV7341
	68	Arm	CNV7342
	69	Guide	CNV7360
	70	Guide	CNV7361
	71	Holder	CNV7437
	72	Arm	CNV7805
	73	Gear	CNV7595
	74	Damper	CNV7618
	75	Motor Unit(M1)	CXB6007
	76	Chassis Unit	CXC2318
	77	Screw Unit	CXB8729
	78	Gear Unit	CXC2397
	79	Arm Unit	CXC2316
	80	Arm	CND1896
	81	Arm	CND1894
	82	Motor Unit(M2)	CXB8933
	83	Bracket	CNC9985
	84	•••••	
	85	Screw(M2x5)	EBA1028
	86	Screw	JFZ20P020FTC
	87	Screw	JGZ17P022FTC
	88	•••••	
	89	Washer	YE20FTC
	90	Pickup Unit(P9.9MP3)(Service)	CXX1805
	91	Screw	IMS26P030FTC
	92	Spring	CBL1635
	93	Clamper	CNV7197
	94	Connector(CN902)	CKS2193

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

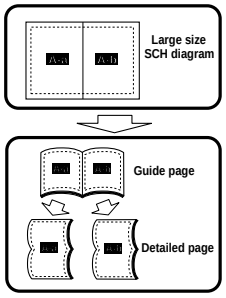
MC-Service




CN101
IP-BUS DRIVER
IC 101 HA12240FP
SYSTEM CONTROLLER
IC 601(1/2) PD5930A
RESET
IC 651
S-80835CNMC-B8U
BZ601 BUZZER
MODE S551
STD
NW
IC 662 TC74VHC08FT
IC 661 TC74VHC08FT
3V→5V
5V→3V
DSP
IC 121 AK7730VT
IC 122 TC7SH08FU
IC 261 NJM2112V
IC 183
IC 213
IC 181
IC 211
IC 182 IC181-183 :PCM1742KE
IC 212 IC211-213 :NJM4580V
DAC
LPF
X121
IC 281 PML011A
SOURCE SELECTOR
ELECTRONIC VOLUME
IC 321 PA2028A
MUTE
SUB WOOFER L
REAR L
FRONT L
VDD REGULATOR
BACKUP SENSE
ACC SENSE
ILM SENSE
TELEPHONE MUTE
1/2VCC REGULATOR
IC262 NJM4558MD
AUDIO 3V REGULATOR
IC 941 NJM2391DL1-33
POWER AMP
IC 301 PAL007A
AUDIO 8V REGULATOR
DAC 5V REGULATOR
IC 961 NJM2872F05
AUTO-EQ
WIRED REMOTE CONTROL
KEYBOARD UNIT
CONTROLLER
IC 801(1/2) TC74VHCT125AFT
IC 801(1/2)
CN1903
SOURCE/VOLUME
ILLUMINATION
FLASH MEMORY
IC 1807 PD6468A
3.3V REGULATOR
IC 1802 S-818A33AUC-BGN
FONT ROM
IC 1806 PD8124A
IC 1808 TC7WH32FK
KEY MATRIX
KEY DATA
IC 1901 RS-140
REMOTE CONTROL SENSOR
OEL CONTROLLER/ KEY CONTROLLER
IC 1805 PD5943A
X1801
CN1802
OEL MODULE
MULTI CONTROL
S1909
RESET
CN1902
MICROPHONE INPUT

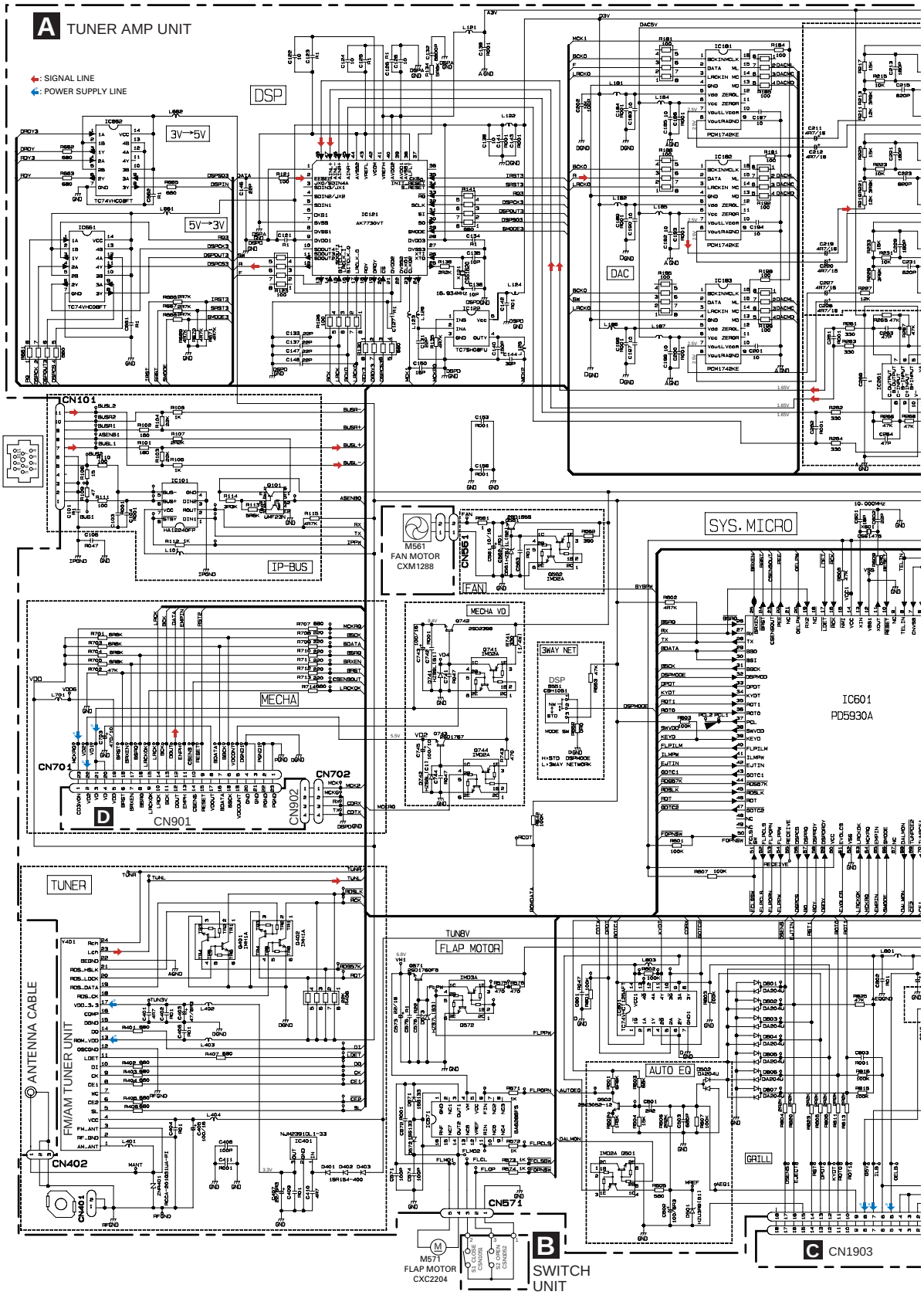
3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

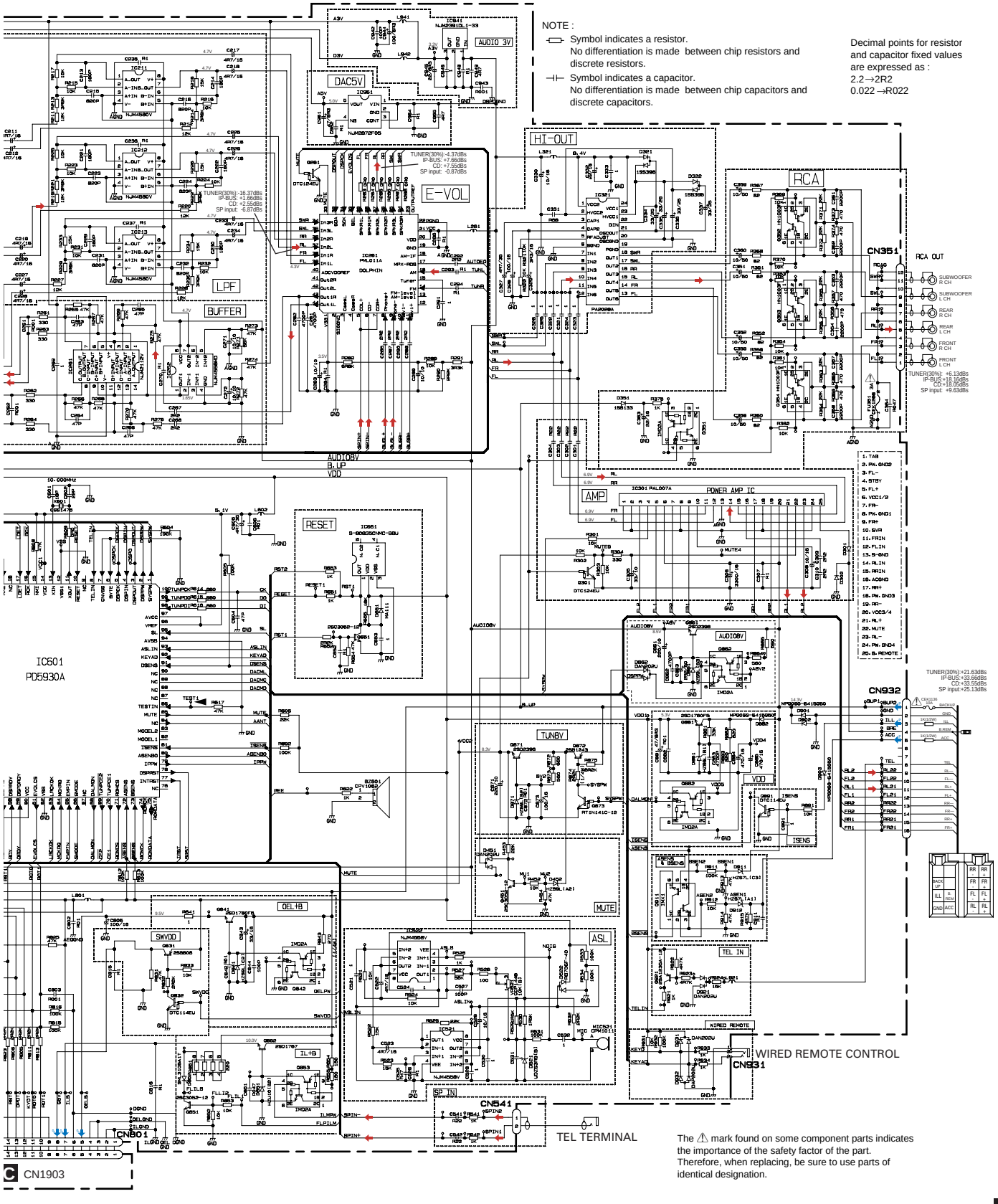


A-a

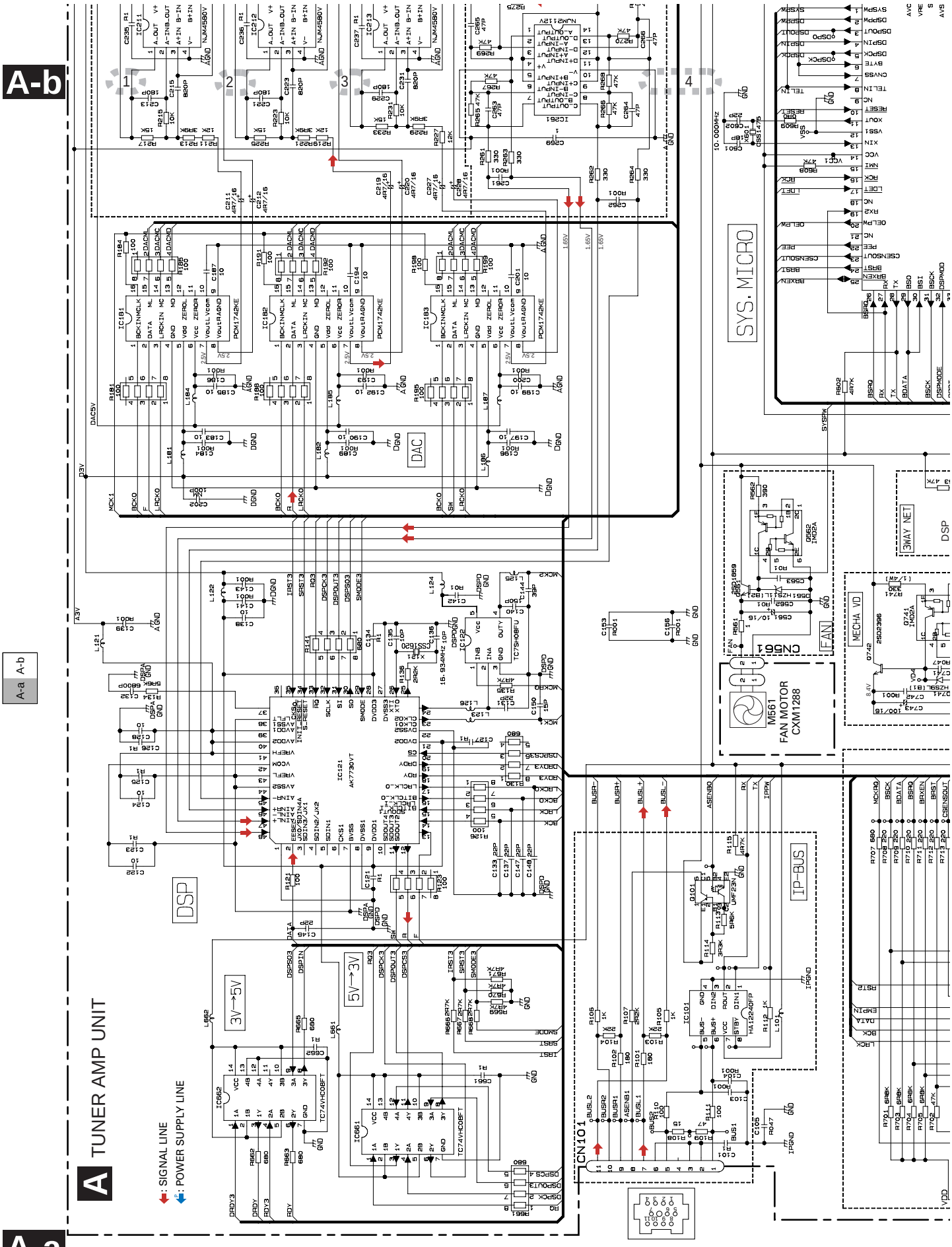
MC-Service

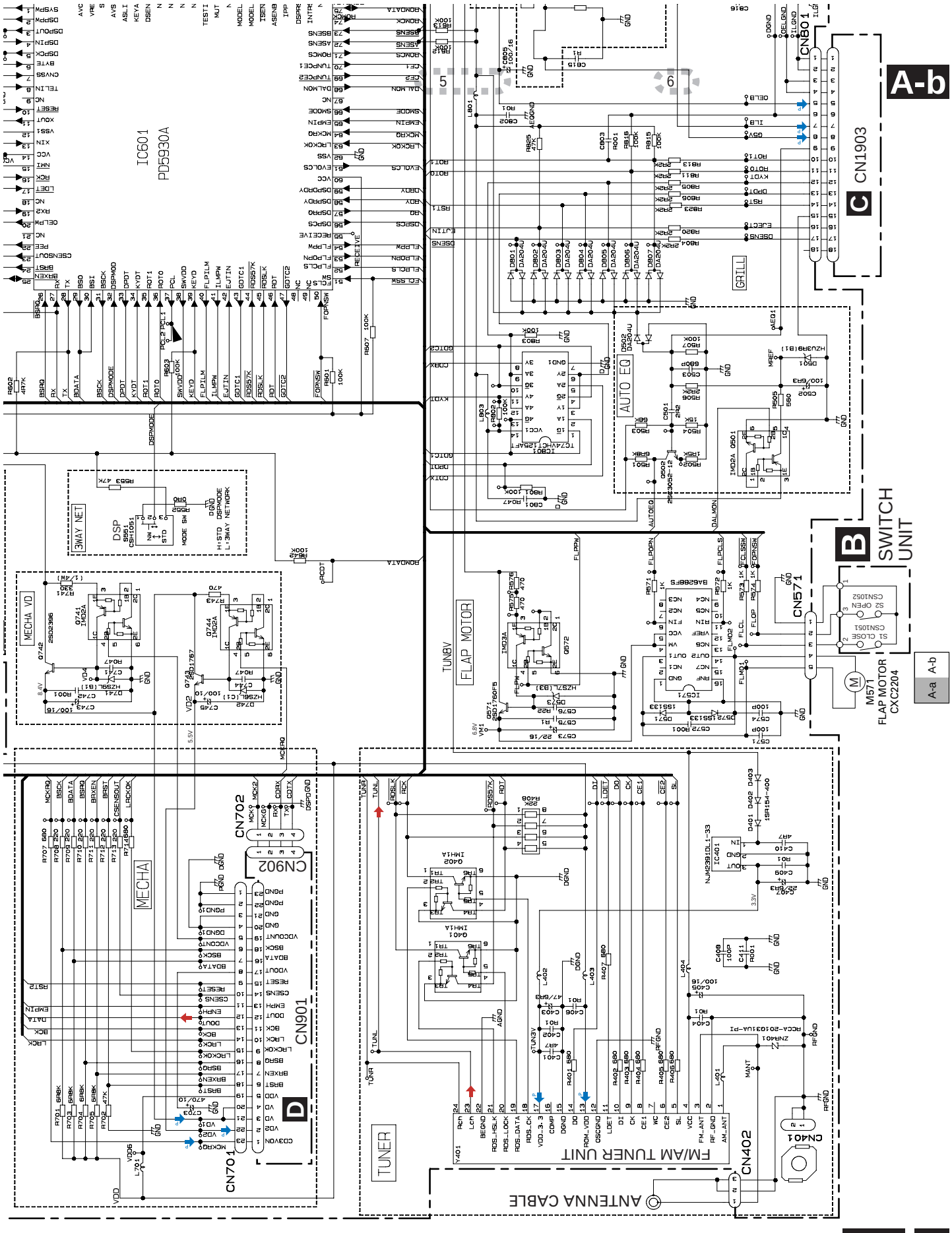


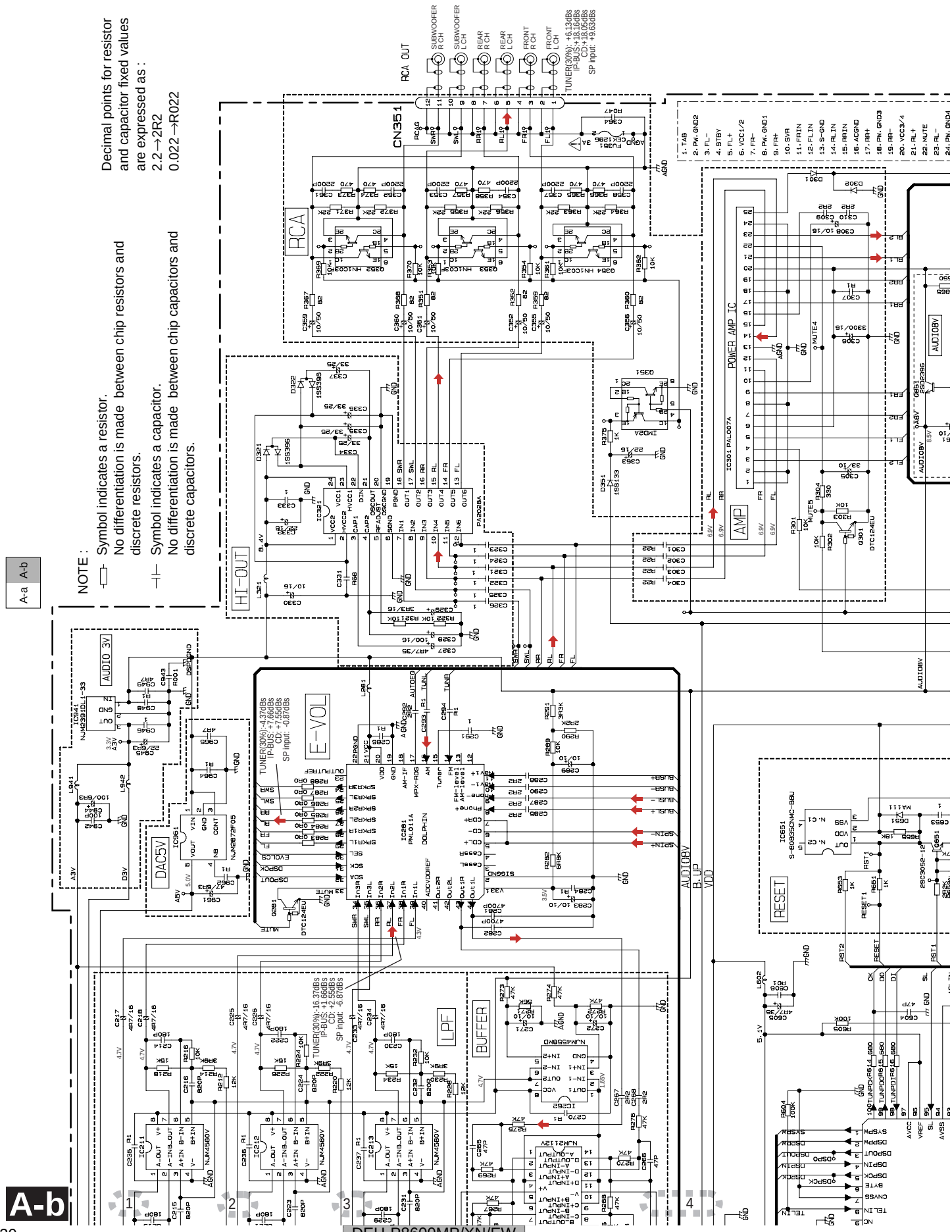
A-b

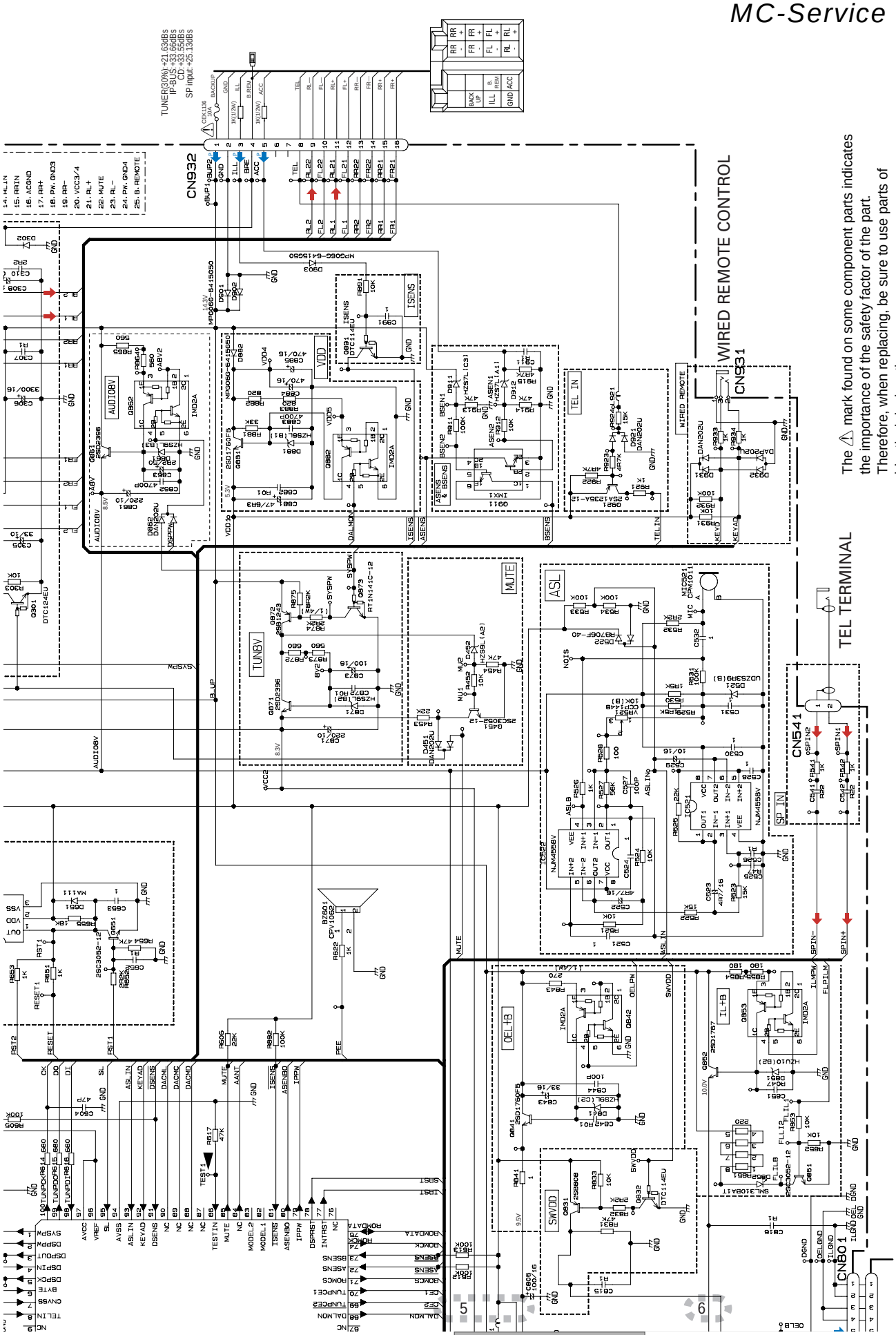


The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.


A-b
A-a
A TUNER AMP UNIT
: SIGNAL LINE
: POWER SUPPLY LINE
DAC
DSP
SYS. MICRO
FAN MOTOR
M561
CXM1288
IP-BUS
3WAY NET
MECHA VD
FAN
CN101
CN561
3V→5V
5V→3V

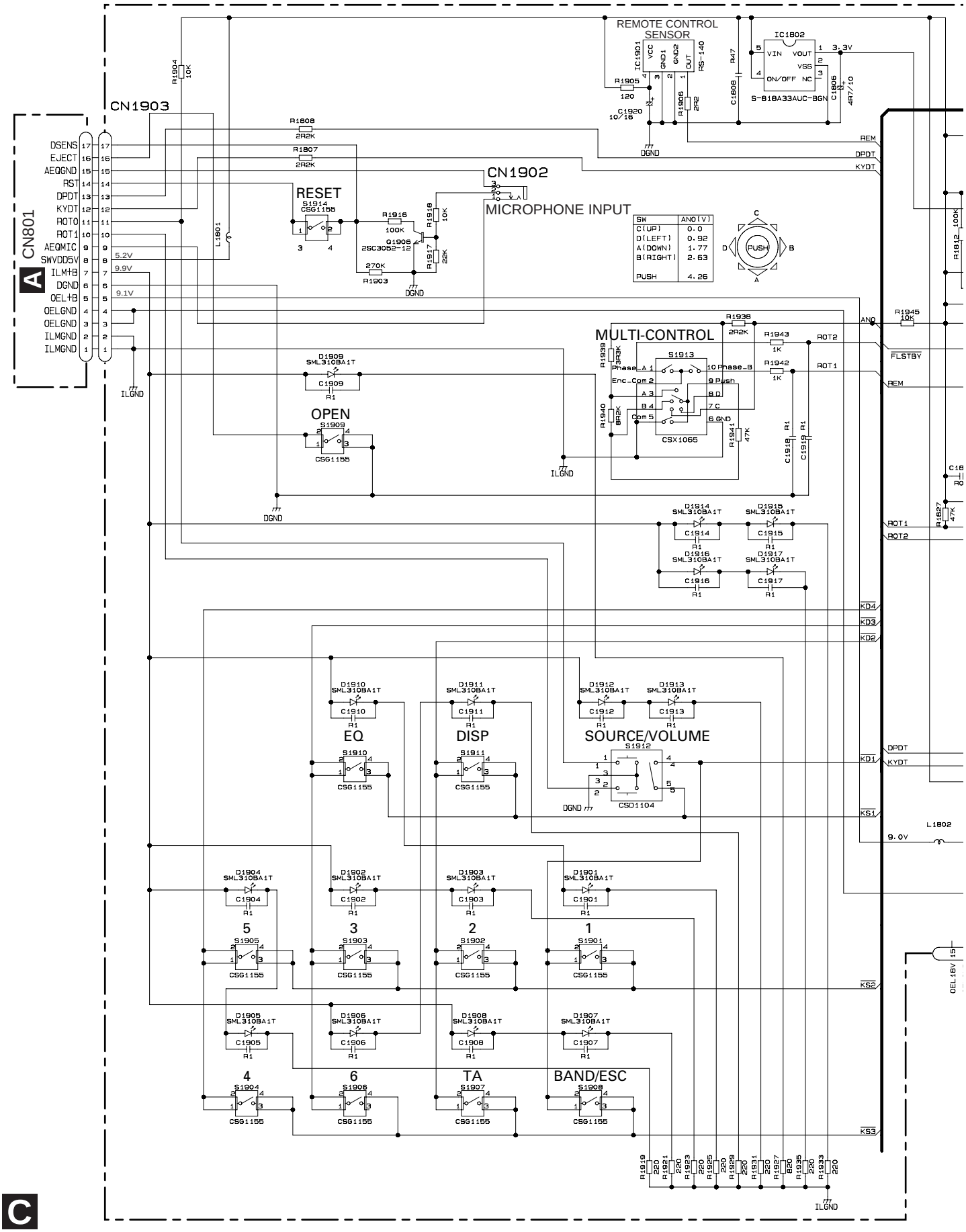

IC601
PD5930A
CN1903
CN801
A-b
GRILL
AUTO EQ
SWITCH UNIT
CN571
FLAP MOTOR
CXC2204
M571
A-b
A-a
3WAY NET
DSP
MECHA VD
MECHA
CN702
CN902
CN901
CN701
TUNER
FM/AM TUNER UNIT
CN402
ANTENNA CABLE
A-a
B


Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
A-a
A-b
RCA OUT
SUBWOOFER R CH
SUBWOOFER L CH
REAR R CH
REAR L CH
FRONT R CH
FRONT L CH
TUNER(30%): +6.13dBs
IP-BUS:+18.16dBs
CD:+18.05dBs
SP input: +9.63dBs
CN351
RCA
HT-OUT
POWER AMP IC
IC301 PAL007A
AMP
E-VOL
BUFFER
LPF
RESET
AUDIO 3V
DAC5V
AUDIO8V
B.UP
VDD
TUNER(30%):-4.37dBs
IP-BUS:+7.66dBs
CD:+7.55dBs
SP input: -0.87dBs
TUNER(30%):-16.37dBs
IP-BUS:+1.66dBs
CD:+1.55dBs
SP input: -6.87dBs
A-b
20
DEH-P8600MP/XN/EW

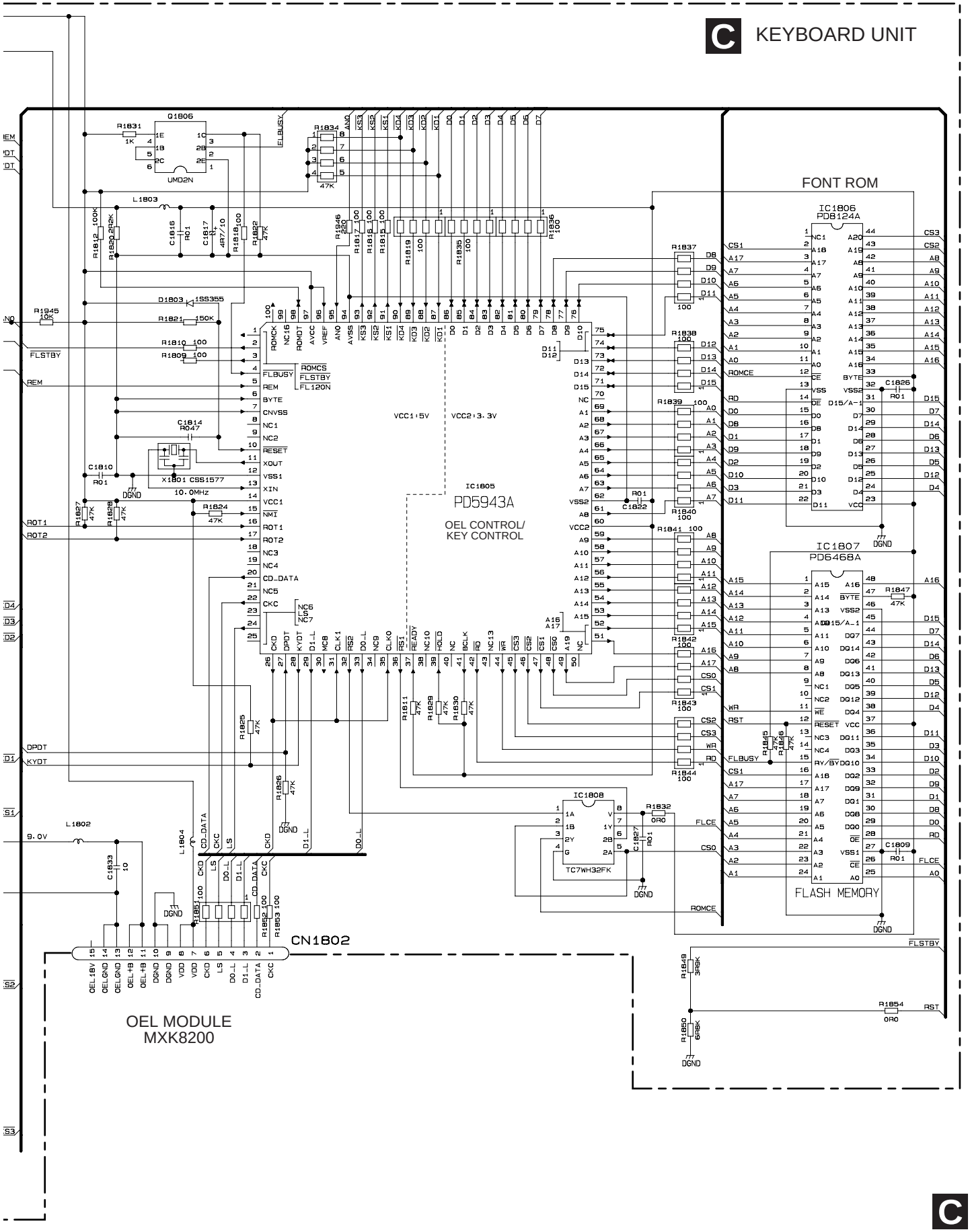

CN932
WIRED REMOTE CONTROL
CN931
TEL TERMINAL
CN541
CN901
TUNER(300%):+21.63dBs
IP-BUS:+33.66dBs
CD:+33.55dBs
SP input:+25.13dBs
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
A-a
A-b

3.3 KEYBOARD UNIT

MC-Service

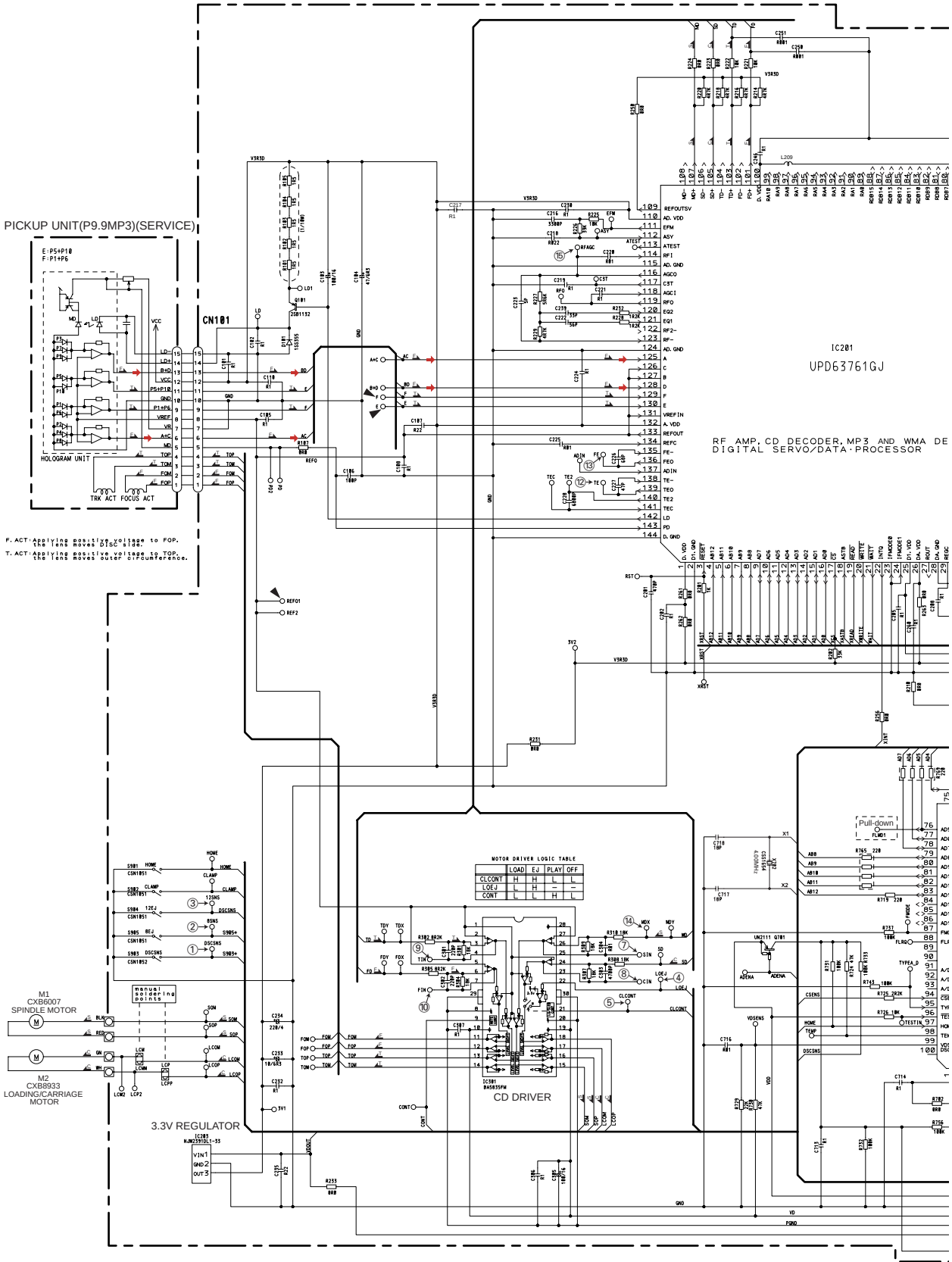


C KEYBOARD UNIT



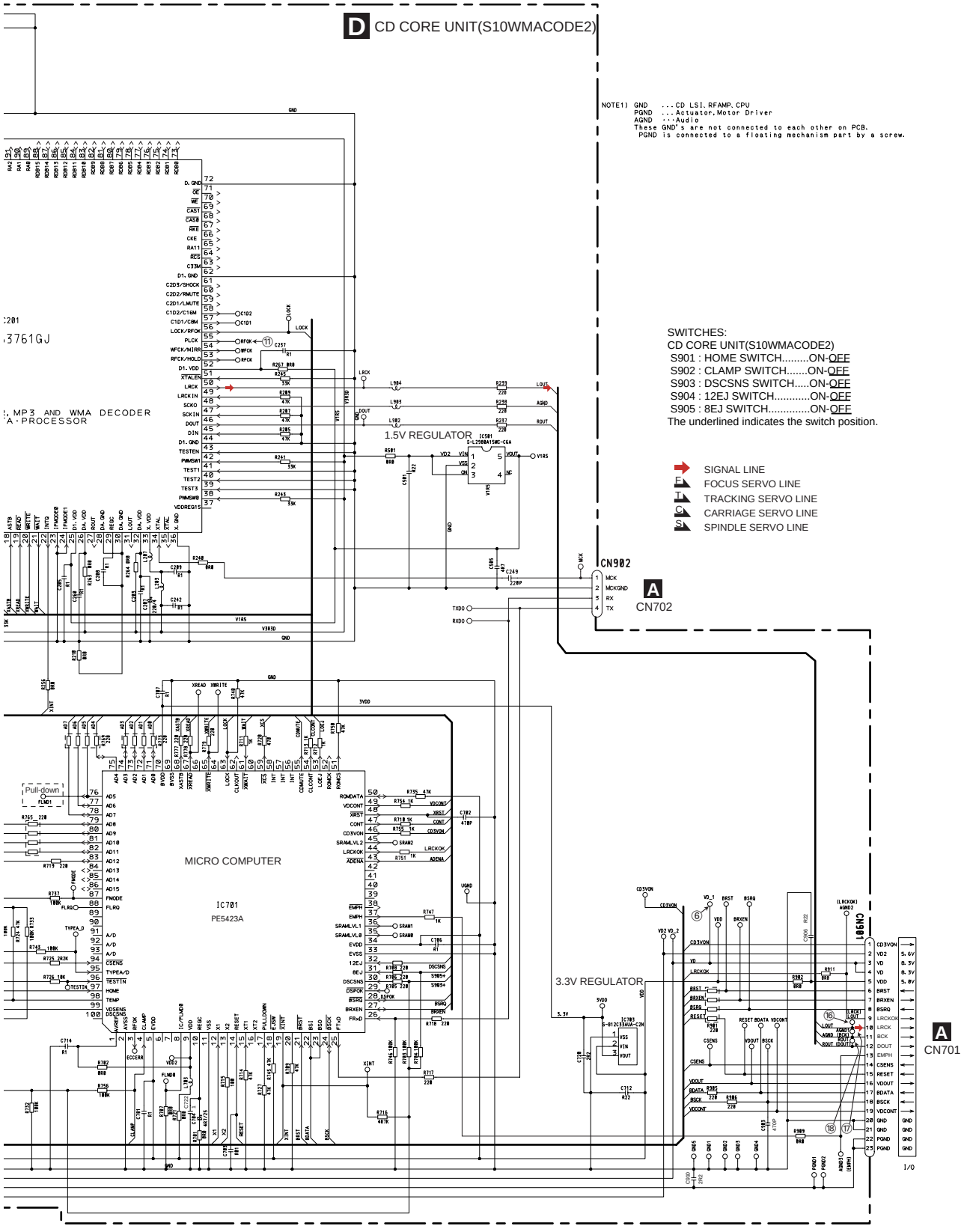
3.4 CD MECHANISM MODULE(GUIDE PAGE)

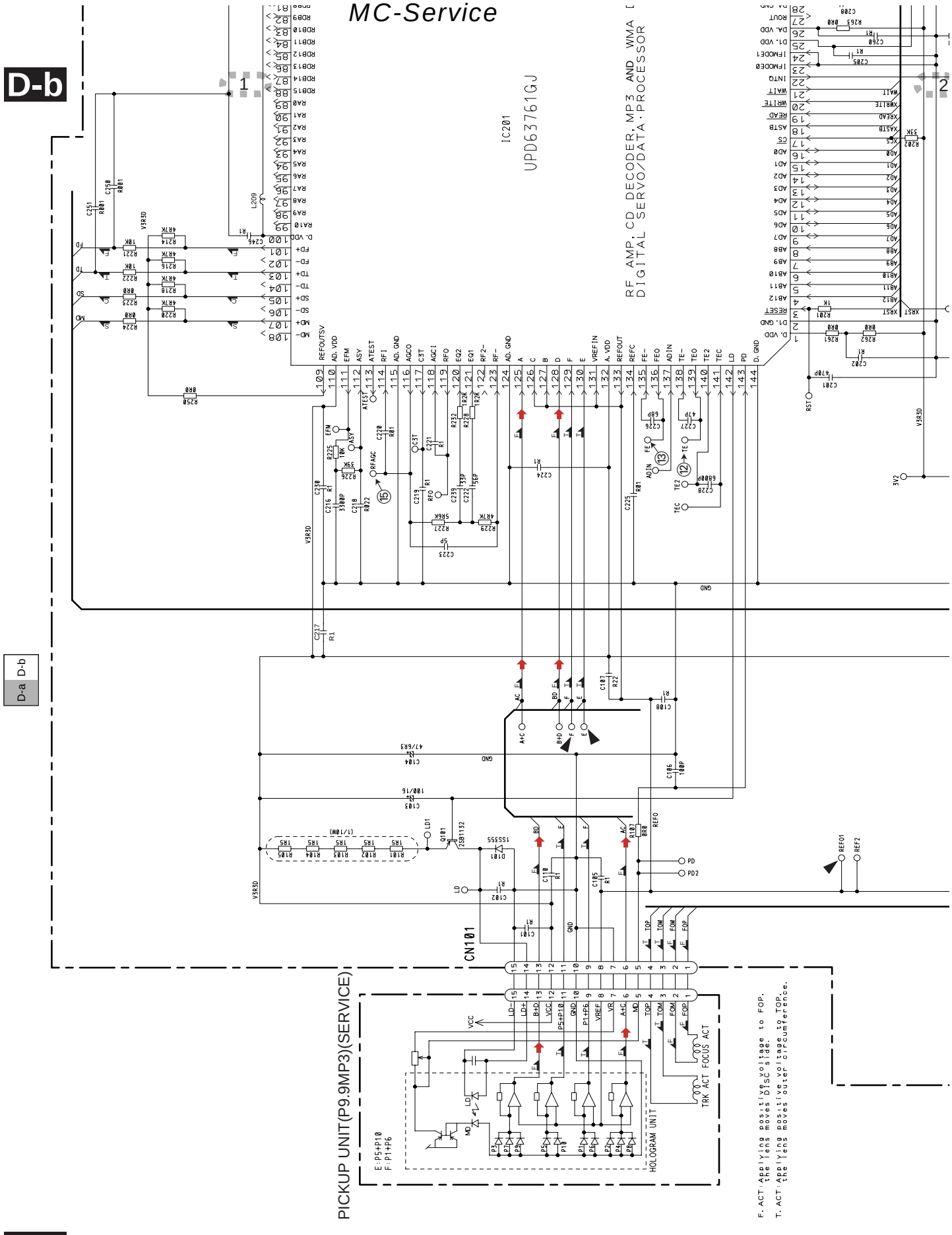
D-a

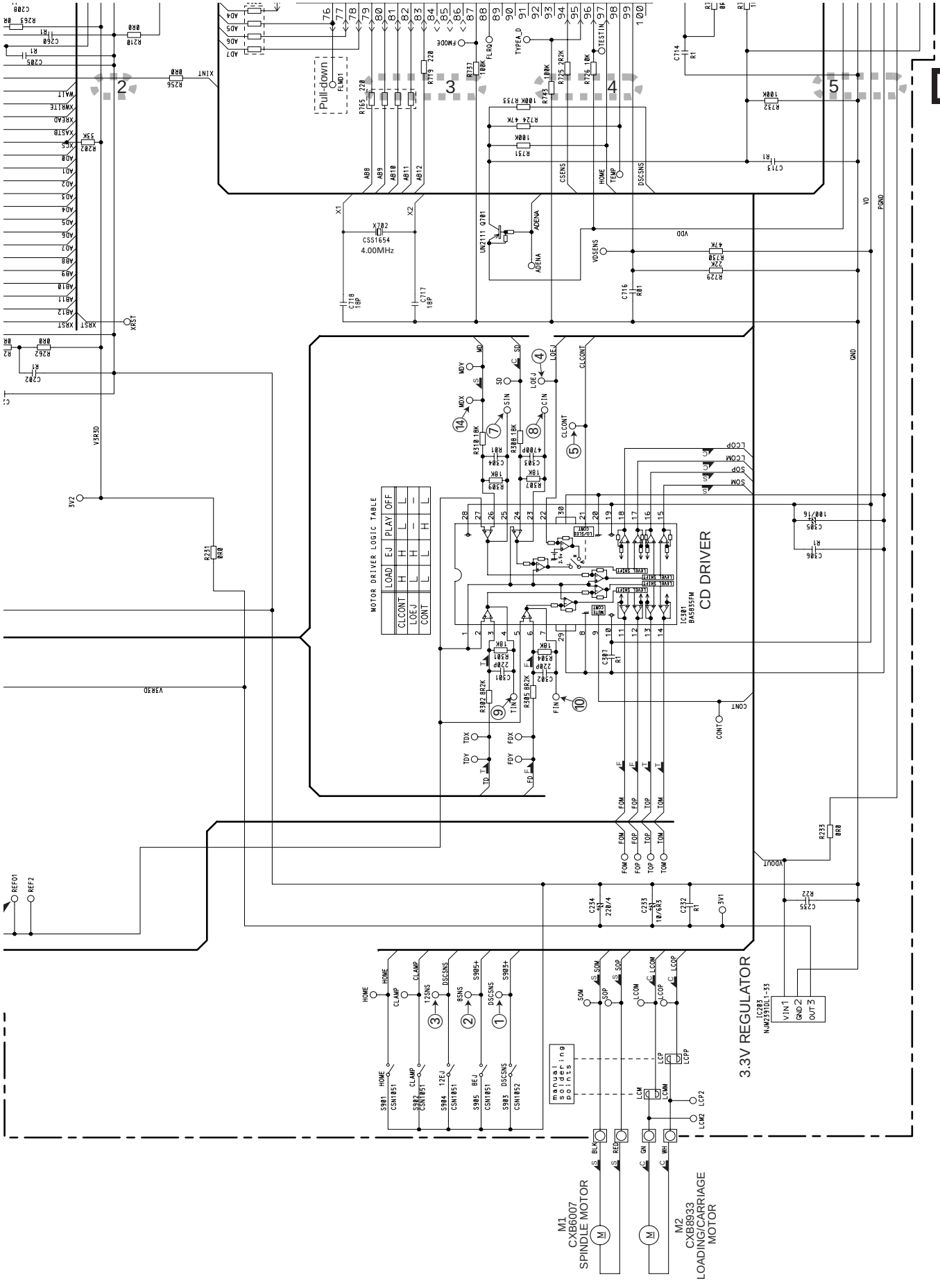


D-b

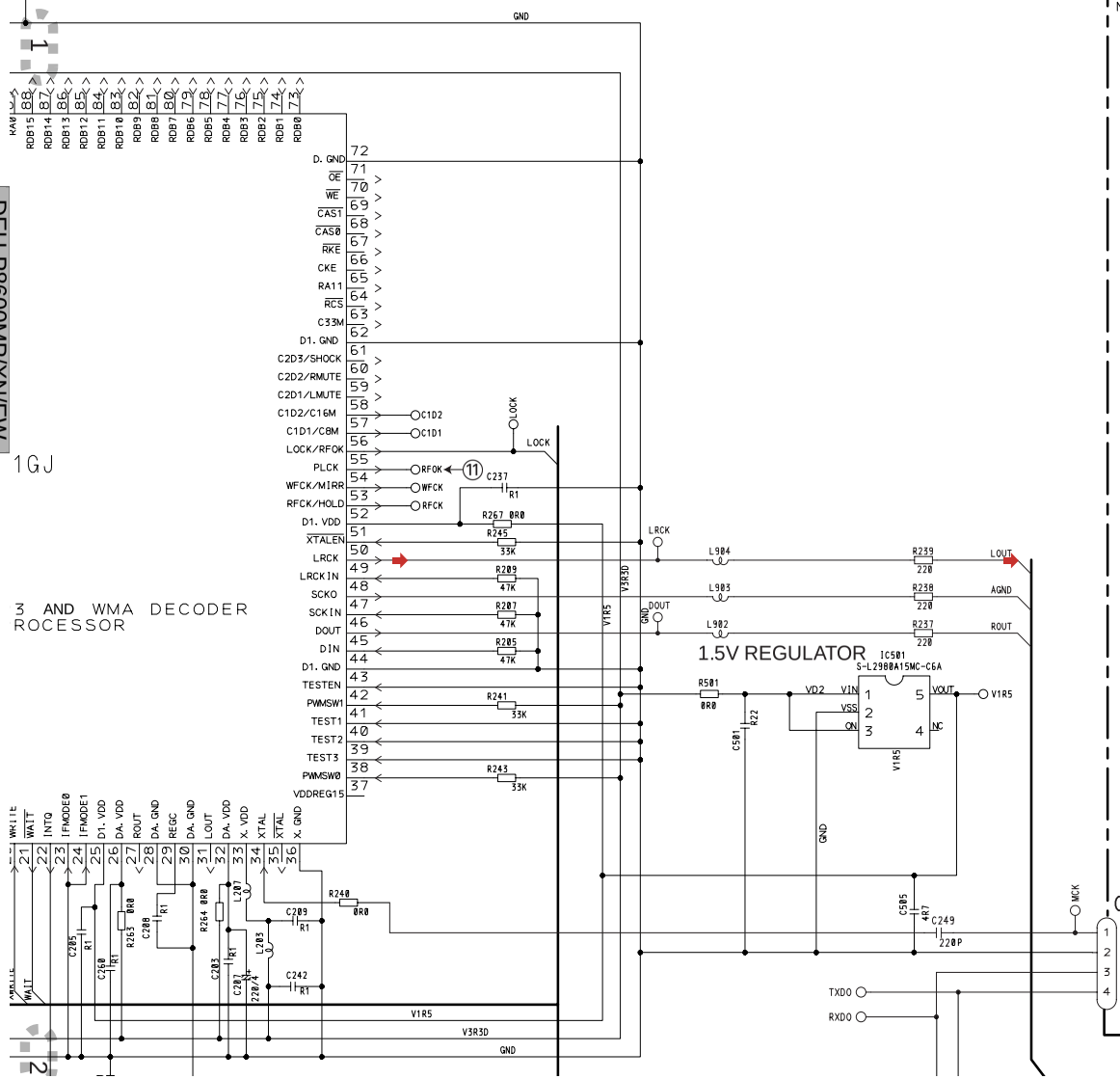
D CD CORE UNIT(S10WMACODE2)




MC-Service
D-b
D-a
IC201
UPD63761GJ
RF AMP, CD DECODER, MP3 AND WMA
DIGITAL SERVO/DATA PROCESSOR
CN101
PICKUP UNIT(P9.9MP3)(SERVICE)
HOLOGRAM UNIT
E:P5+P10
F:P1+P6
F. ACT : Applying positive voltage to FOP.
the lens moves DISC side.
T. ACT : Applying positive voltage to TOP.
the lens moves outer circumference.


D-b
D-a
CD DRIVER
3.3V REGULATOR
M1
CXB6007
SPINDLE MOTOR
M2
CXB8933
LOADING/CARRIAGE
MOTOR
MOTOR DRIVER LOGIC TABLE
LOAD
EJ
PLAY
OFF
CLCONT
LOEJ
CONT
4.00MHz
Pull-down

D CD CORE UNIT(S10WMACODE2)



NOTE1) GND ...CD LSI, RFAMP, CPU
PGND ...Actuator, Motor Driver
AGND ...Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.

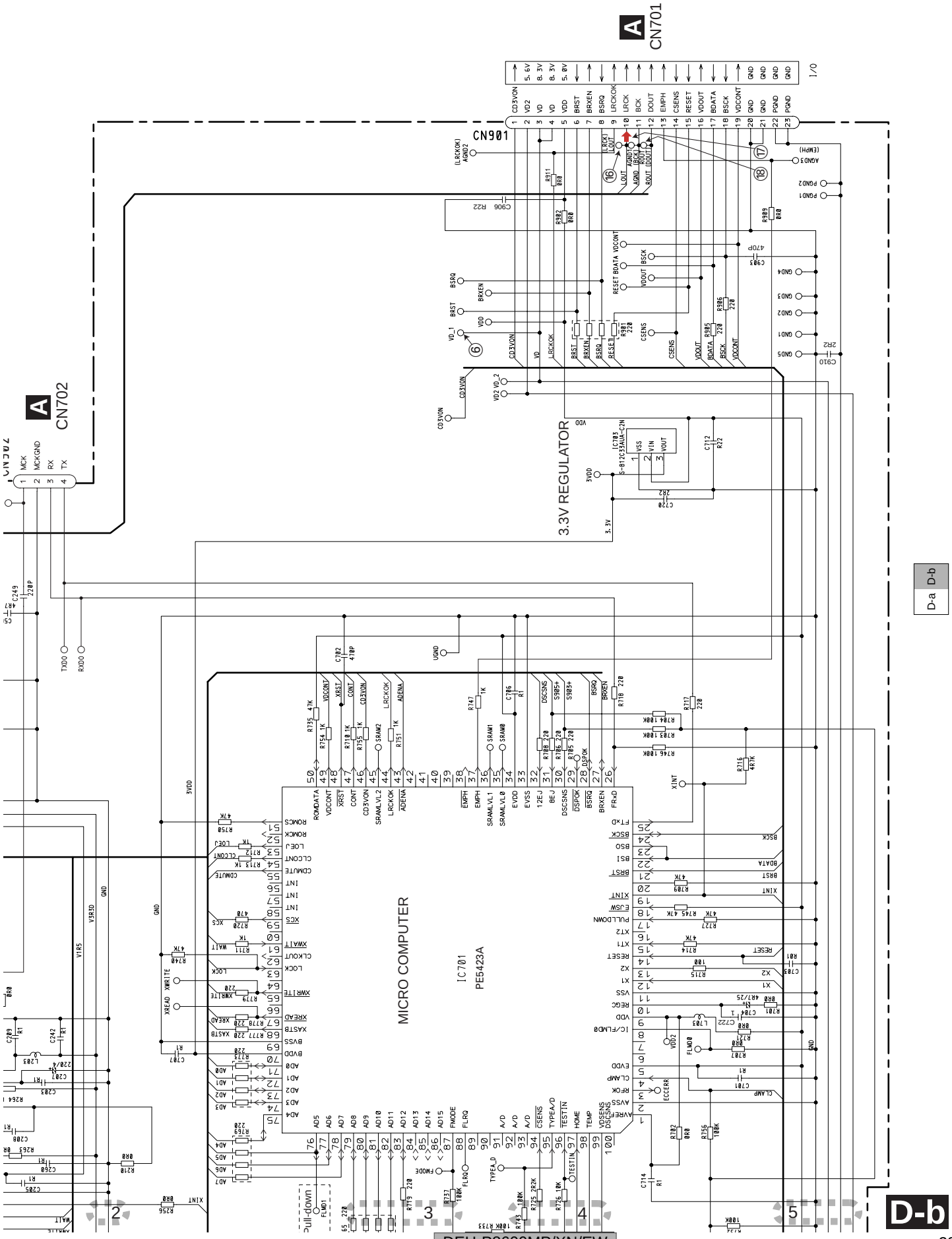
SWITCHES:
CD CORE UNIT(S10WMACODE2)
S901 : HOME SWITCH.....ON-OFF
S902 : CLAMP SWITCH.....ON-OFF
S903 : DSCSNS SWITCH.....ON-OFF
S904 : 12EJ SWITCH.....ON-OFF
S905 : 8EJ SWITCH.....ON-OFF
The underlined indicates the switch position.

SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE

DEH-P8600MP/XN/EW
1GJ

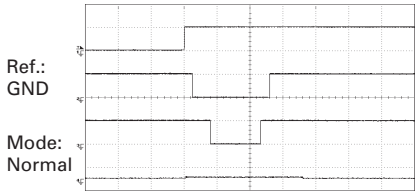
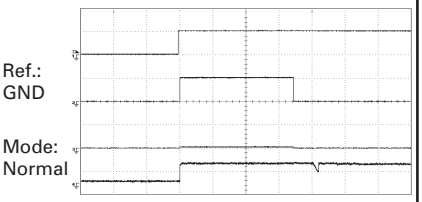
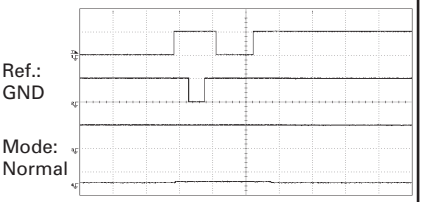
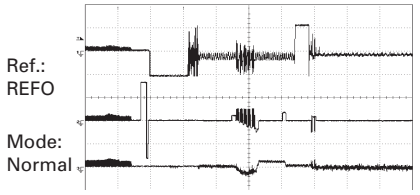
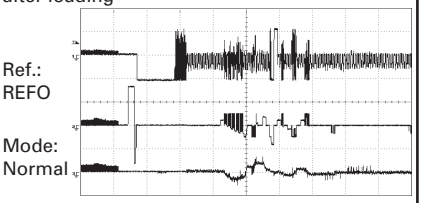
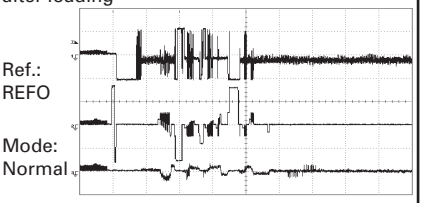
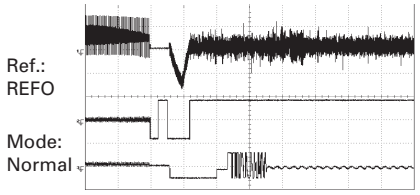
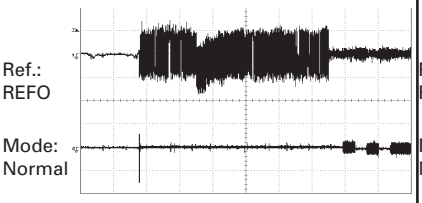
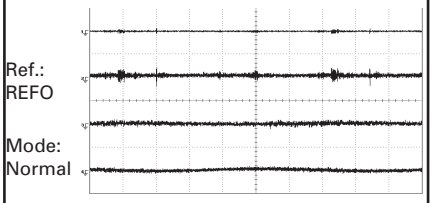
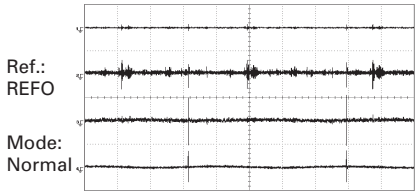
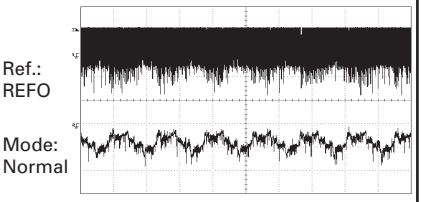
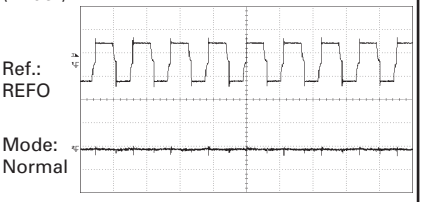
3 AND WMA DECODER
ROCESSOR

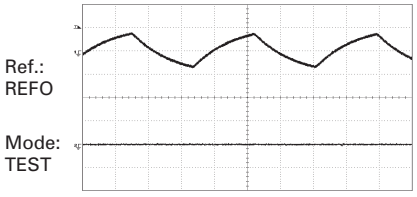
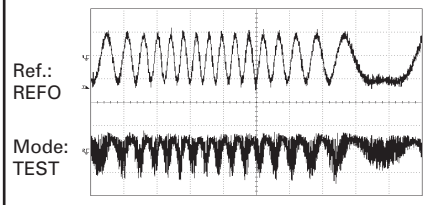
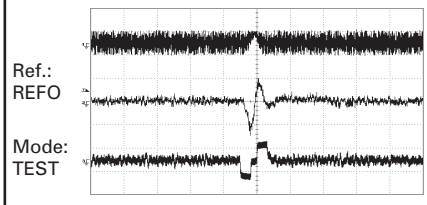
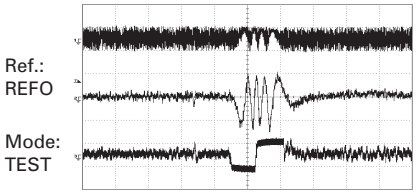
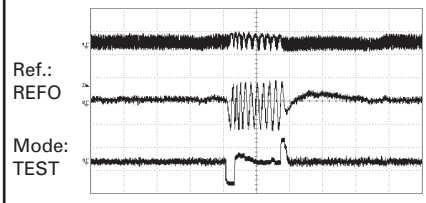
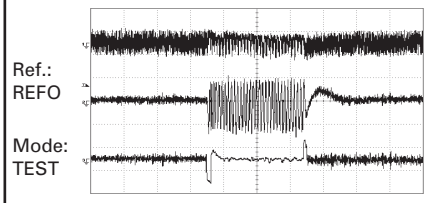
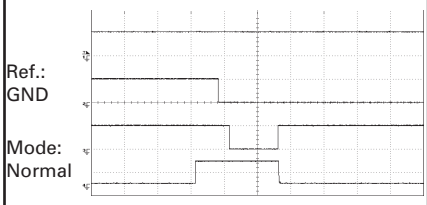
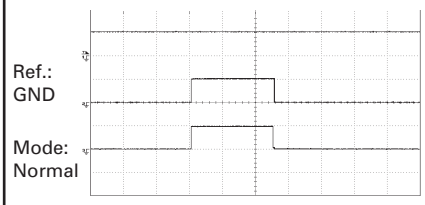
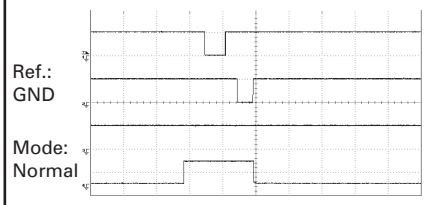
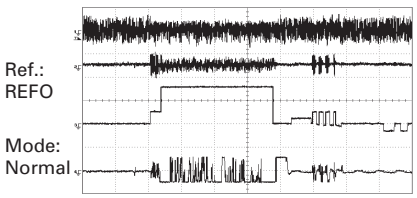
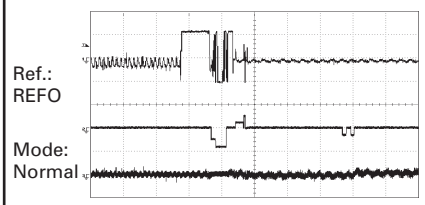
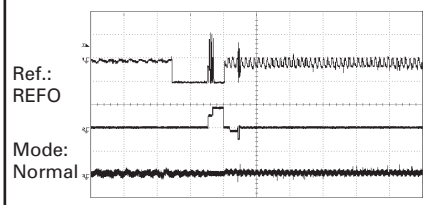
MC-Service

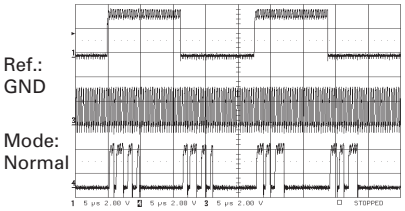
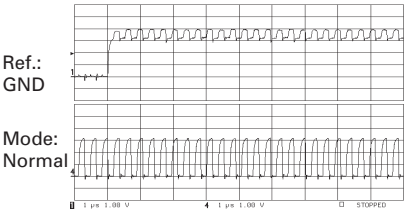
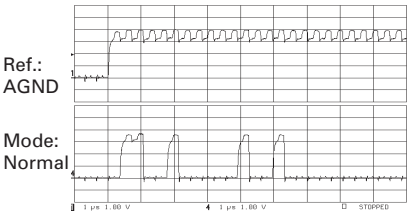

CN701
CN901
CN702
3.3V REGULATOR
MICRO COMPUTER
IC701
PE5423A
D-a
D-b
D-b

● Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65V)

① DSCSNS 5V/div 500ms/div ② 8SNS 5V/div ③ 12SNS 5V/div ④ LOEJ 5V/div 12 cm CD Loading operation  	① DSCSNS 5V/div 500ms/div ⑤ CLCONT 5V/div ④ LOEJ 5V/div ⑥ VD 10V/div 12 cm CD Loading operation  	① DSCSNS 5V/div 500ms/div ② 8SNS 5V/div ③ 12SNS 5V/div ④ LOEJ 5V/div 8 cm CD Loading operation 
⑦ SIN 1V/div 2s/div ⑧ CIN 500mV/div ⑨ TIN 500mV/div 12 cm CD-DA setup operation after loading  	⑦ SIN 1V/div 1s/div ⑧ CIN 500mV/div ⑨ TIN 500mV/div 12 cm CD-ROM(1 session) setup operation after loading  	⑦ SIN 1V/div 2s/div ⑧ CIN 500mV/div ⑨ TIN 500mV/div 12 cm CD-ROM(3 sessions) setup operation after loading 
⑩ FIN 200mV/div 500ms/div ⑪ RFOK 2V/div ⑦ SIN 2V/div 12 cm CD-DA Source On setup operation  	⑫ TE 500mV/div 200ms/div ⑬ FE 500mV/div Source On setup operation  	⑬ FE 500mV/div 20ms/div ⑩ FIN 500mV/div ⑫ TE 500mV/div ⑨ TIN 500mV/div CD-DA Play operation 
⑬ FE 500mV/div 20ms/div ⑩ FIN 500mV/div ⑫ TE 500mV/div ⑨ TIN 500mV/div CD-ROM play operation(Regular track Jump)  	⑭ MDX 1V/div 50ms/div ⑦ SIN 200mV/div Spindle waveform during play operation  	⑭ MDX 2V/div 5µs/div ⑦ SIN 1V/div Spindle waveform during play operation (Wider) 

⑩ FIN 500mV/div 200ms/div ⑬ FE 500mV/div Focus Search waveform  	⑫ TE 500mV/div 2ms/div ⑮ RFAGC 500mV/div Track Open waveform  	⑮ RFAGC 1V/div 500µs/div ⑫ TE 500mV/div ⑨ TIN 500mV/div 1 Track Jump waveform 
⑮ RFAGC 1V/div 500µs/div ⑫ TE 500mV/div ⑨ TIN 500mV/div 4 Tracks Jump waveform  	⑮ RFAGC 1V/div 1ms/div ⑫ TE 500mV/div ⑨ TIN 500mV/div 10 Tracks Jump waveform  	⑮ RFAGC 1V/div 2ms/div ⑫ TE 500mV/div ⑨ TIN 500mV/div 32 Tracks Jump waveform 
① DSCSNS 5V/div 500ms/div ② 8SNS 5V/div ③ 12SNS 5V/div ④ LOEJ 5V/div 12 cm CD Eject operation  	① DSCSNS 5V/div 500ms/div ⑤ CLCONT 5V/div ④ LOEJ 5V/div 12 cm CD Eject operation  	① DSCSNS 5V/div 500ms/div ② 8SNS 5V/div ③ 12SNS 5V/div ④ LOEJ 5V/div 8 cm CD Eject operation 
⑮ RFAGC 1V/div 200ms/div ⑫ TE 1V/div ⑧ CIN 500mV/div ⑦ SIN 2V/div Search operation(Outter to Inner)  	⑦ SIN 1V/div 500ms/div ⑧ CIN 500mV/div ⑨ TIN 500mV/div CD-ROM >> CD-DA mode change(Band key)  	⑦ SIN 1V/div 500ms/div ⑧ CIN 500mV/div ⑨ TIN 500mV/div CD-DA >> CD-ROM mode change(Band key) 

⑯ LRCK 2V/div 5µs/div ⑰ BCK 2V/div ⑱ DOUT 2V/div Digtal audio waveform  	⑯ LRCK 1V/div 1µs/div ⑰ BCK 1V/div Digtal audio waveform  	⑯ LRCK 1V/div 1µs/div ⑱ DOUT 1V/div Analog audio waveform 

A

B

C

D

E

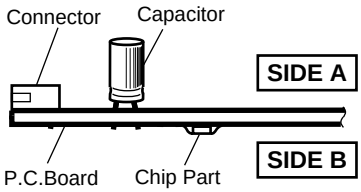
F

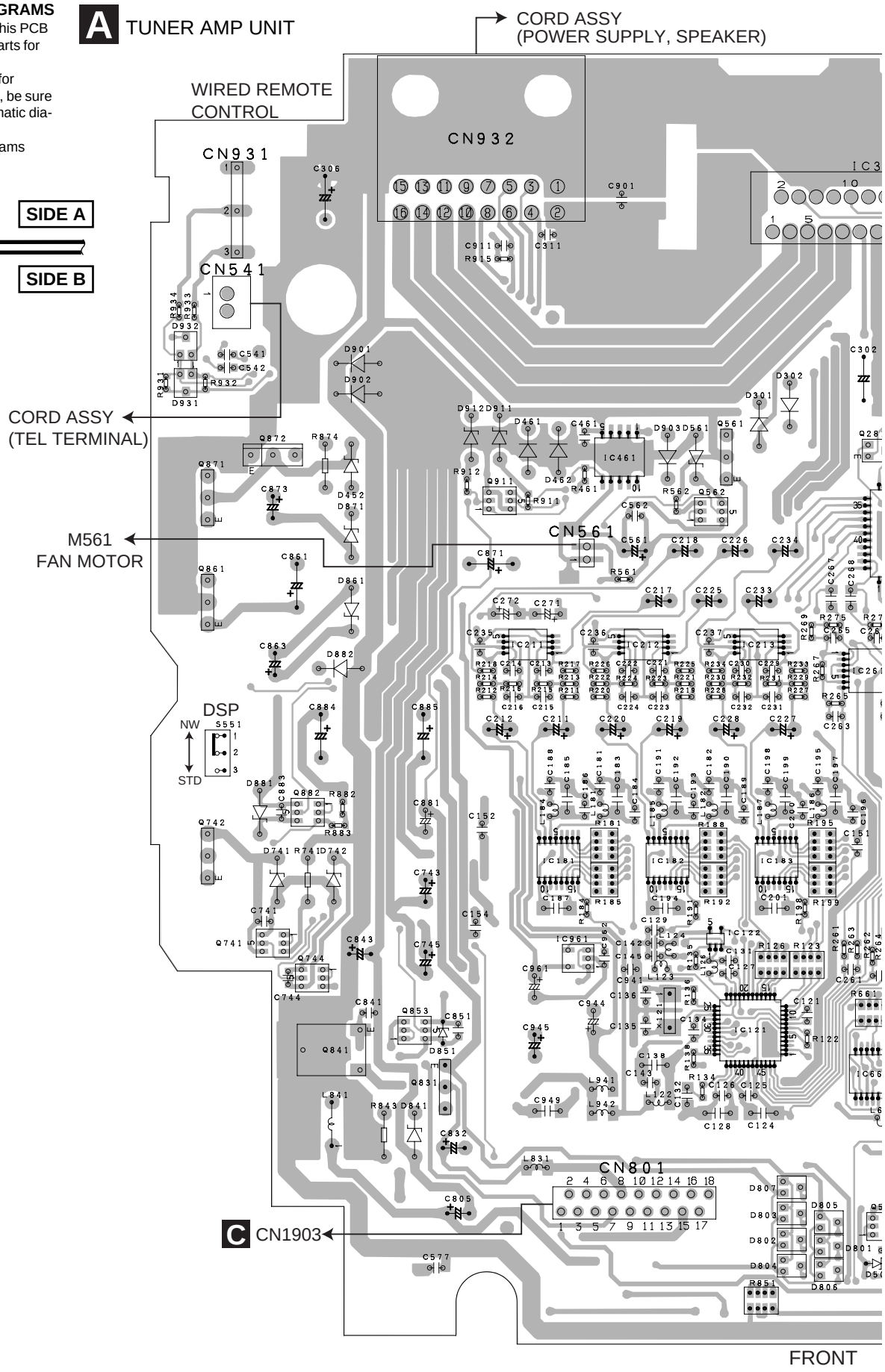
4. PCB CONNECTION DIAGRAM
4.1 TUNER AMP UNIT

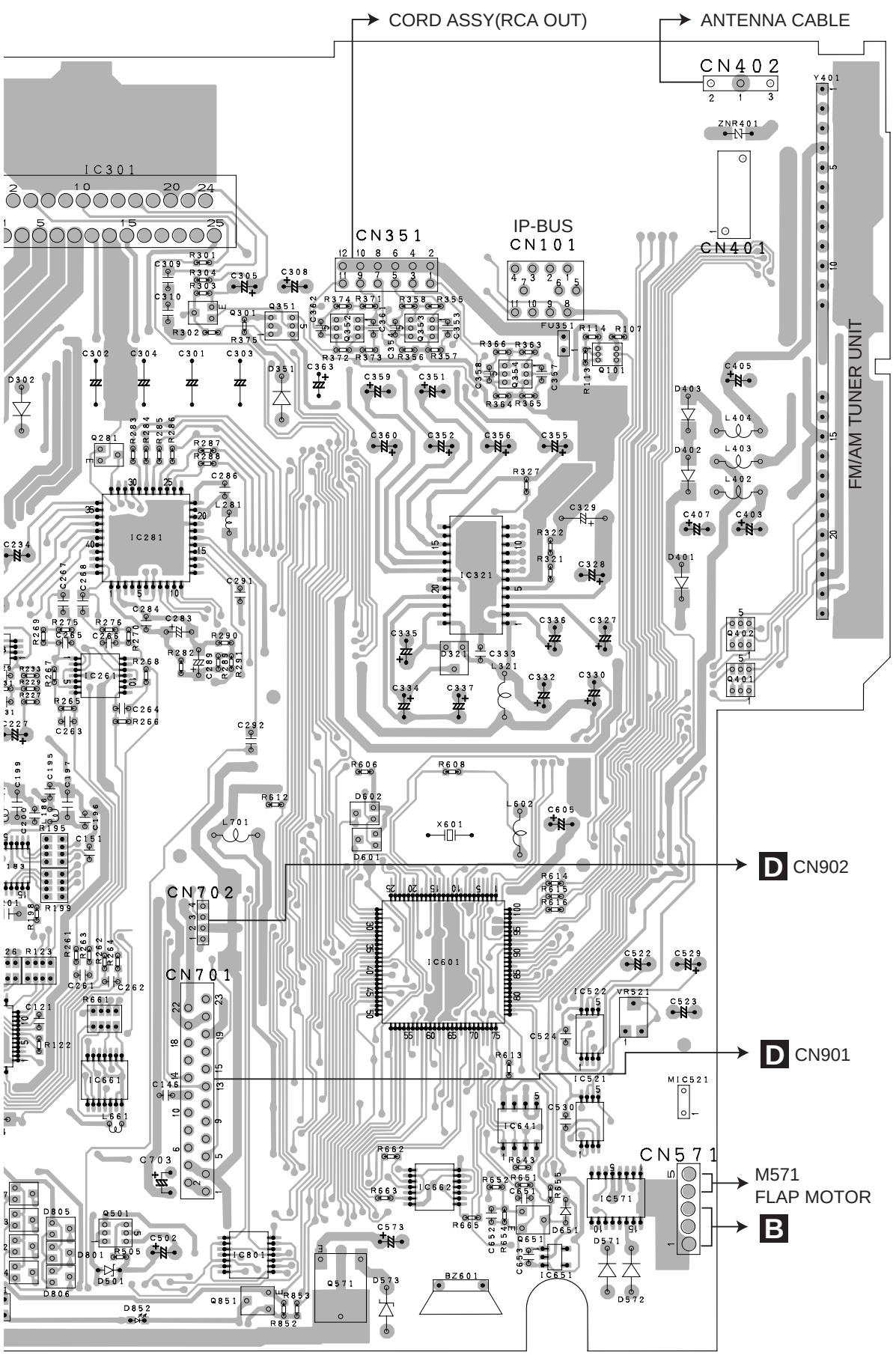
MC-Service

NOTE FOR PCB DIAGRAMS

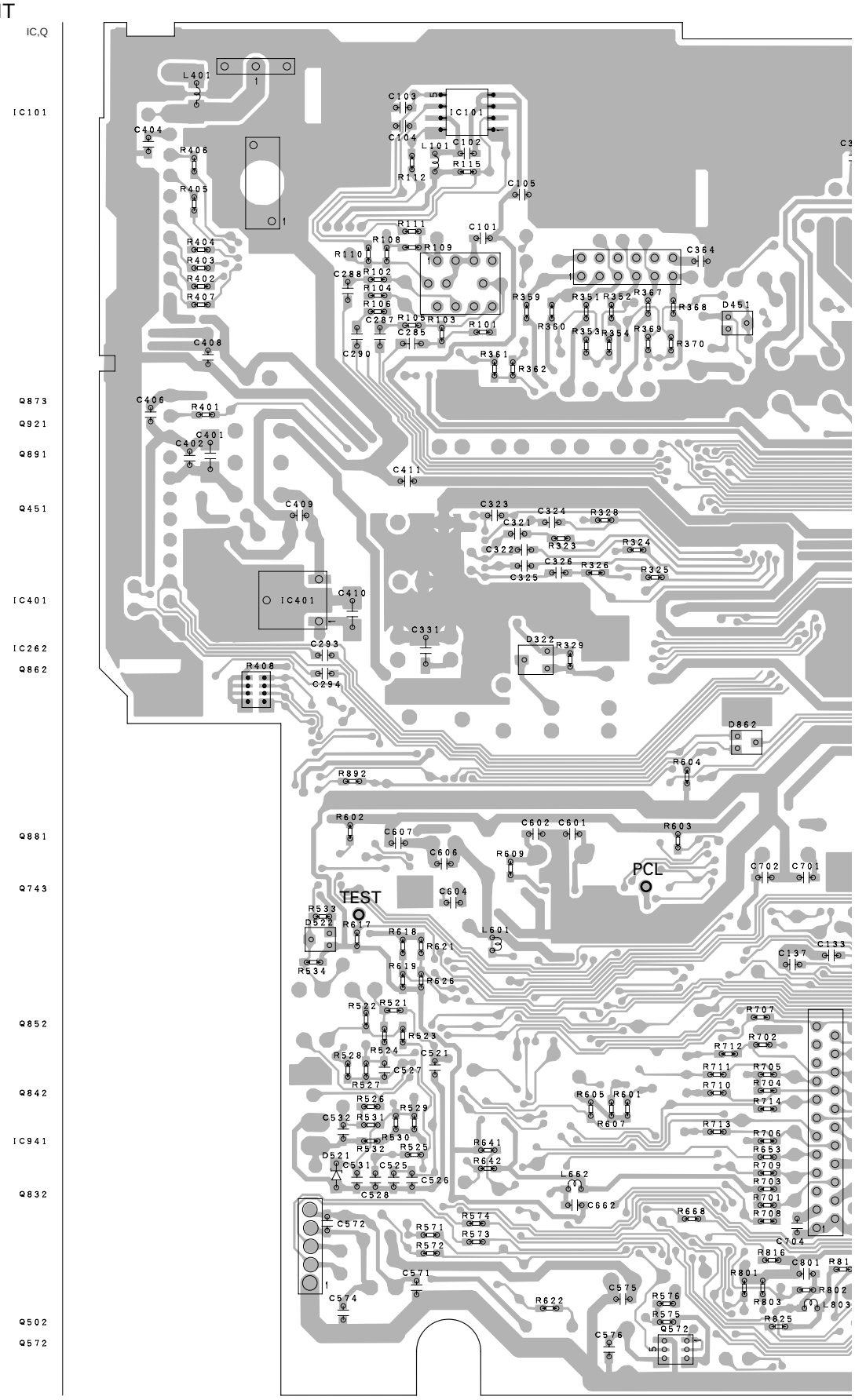
1. The parts mounted on this PCB include all necessary parts for several destination. For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



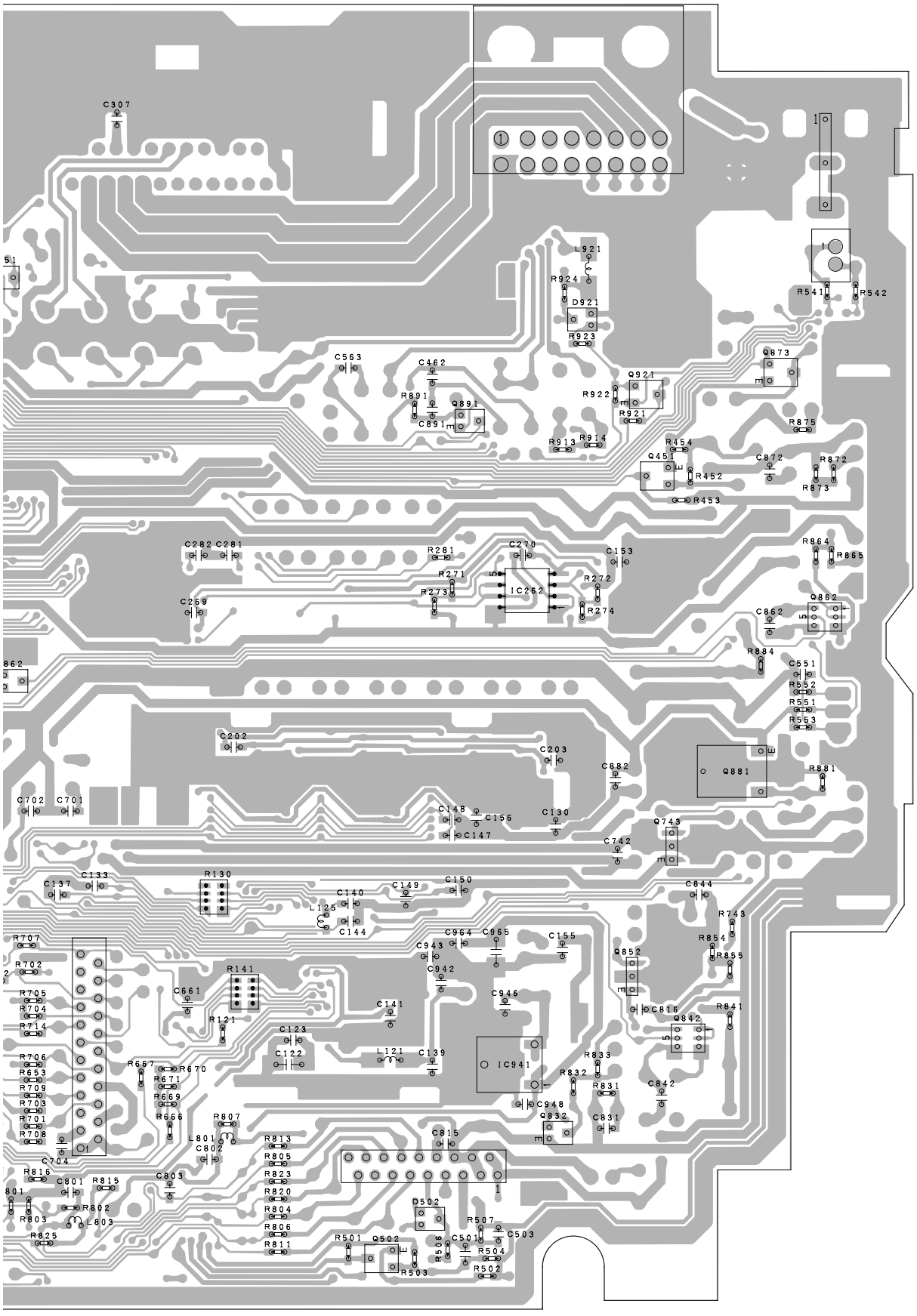



SIDE A
CORD ASSY(RCA OUT)
ANTENNA CABLE
CN402
CN351
IP-BUS
CN101
CN401
FM/AM TUNER UNIT
IC301
IC281
IC321
IC601
IC661
IC641
IC662
IC571
IC651
IC801
IC261
IC522
IC521
IC121
IC211
IC212
IC213
IC181
IC182
IC183
IC961
IC122
D CN902
D CN901
CN702
CN701
CN571
M571
FLAP MOTOR
B
FRONT
IC,Q
Q351 Q352 Q353
Q301
Q354
Q101
Q561
Q281 Q872
IC461 Q871
Q911
Q562
Q861 IC321
Q402
Q401
Q882
Q742
Q741
IC601 Q744
IC522 VR521
Q853
Q841
IC661
Q831
Q651
Q501
Q571
Q851

A TUNER AMP UNIT



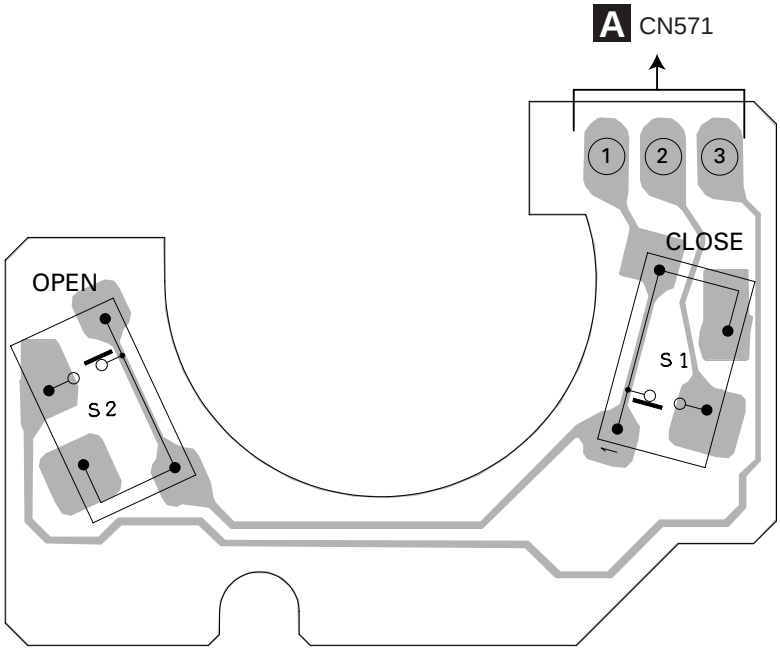
SIDE B


C307
L921
R924
D921
R923
R541
R542
C563
C462
R891
Q891
C891
Q921
R922
R921
Q873
R875
R913
R914
R454
Q451
R452
R453
C872
R872
R873
C282
C281
R281
C270
C153
R271
R273
IC262
R272
R274
C269
R864
R865
Q862
C862
R884
C551
R552
R551
R553
C202
C203
C882
Q881
R881
C702
C701
C148
C156
C147
C130
C742
Q743
C133
C137
R130
C140
C149
C150
L125
C144
C844
R743
R854
R855
C964
C965
C155
C943
C942
Q852
C816
Q842
R841
R707
R702
R705
R704
R714
R141
C661
R121
C946
C141
C123
C122
L121
C139
IC941
R833
R832
R831
C842
C948
Q832
C831
R706
R653
R709
R703
R701
R708
R667
R671
R670
R669
R666
R807
L801
C802
C704
C815
R813
R805
R823
R820
R804
R806
R811
R816
C801
R815
C803
R802
L803
R825
D502
R507
C503
C501
R504
R502
R501
Q502
R503
R506

4.2 SWITCH UNIT

A

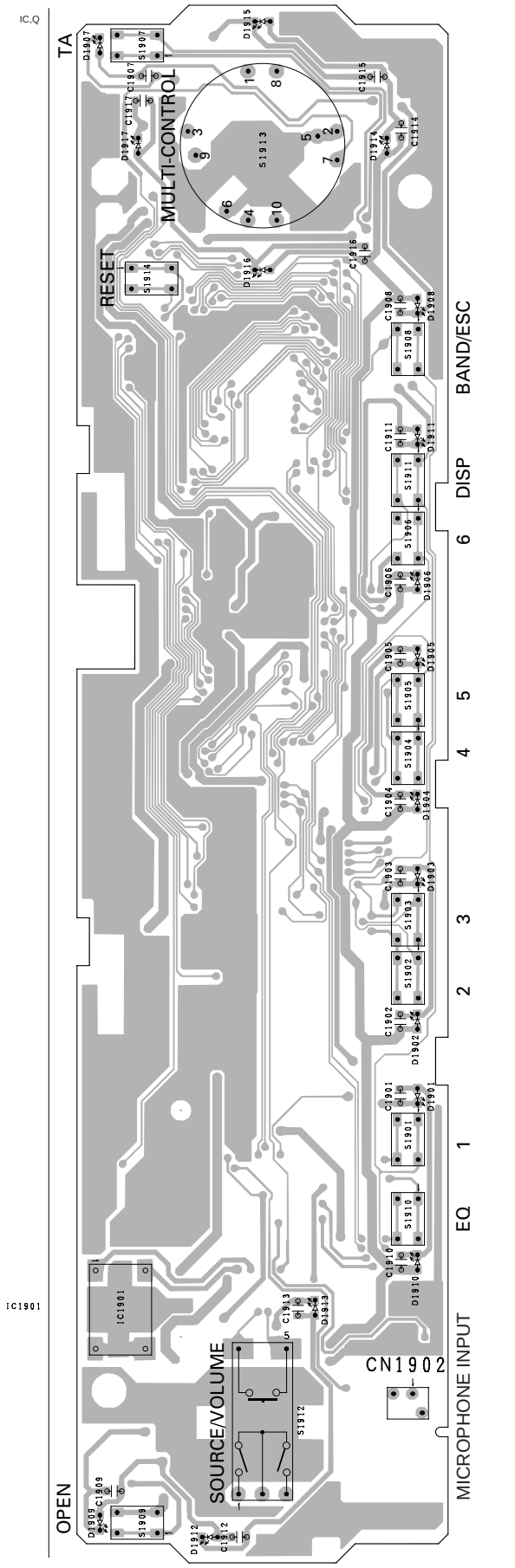
B SWITCH UNIT



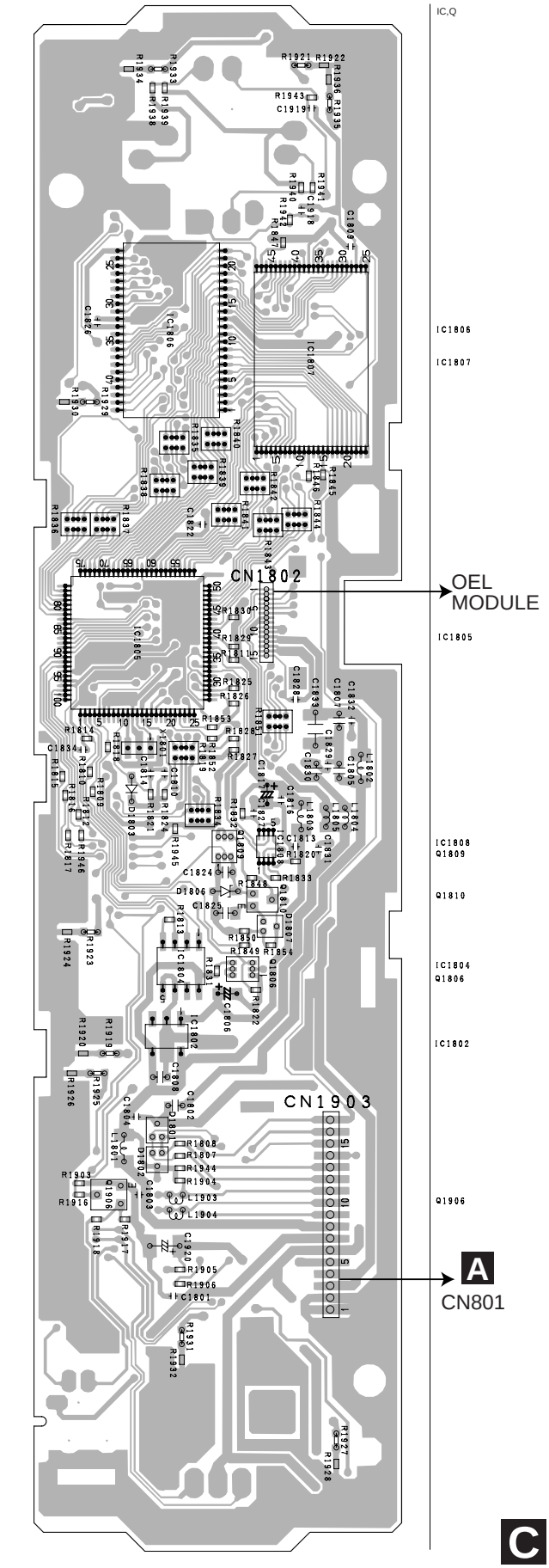
B

4.3 KEYBOARD UNIT

C KEYBOARD UNIT **SIDE A**



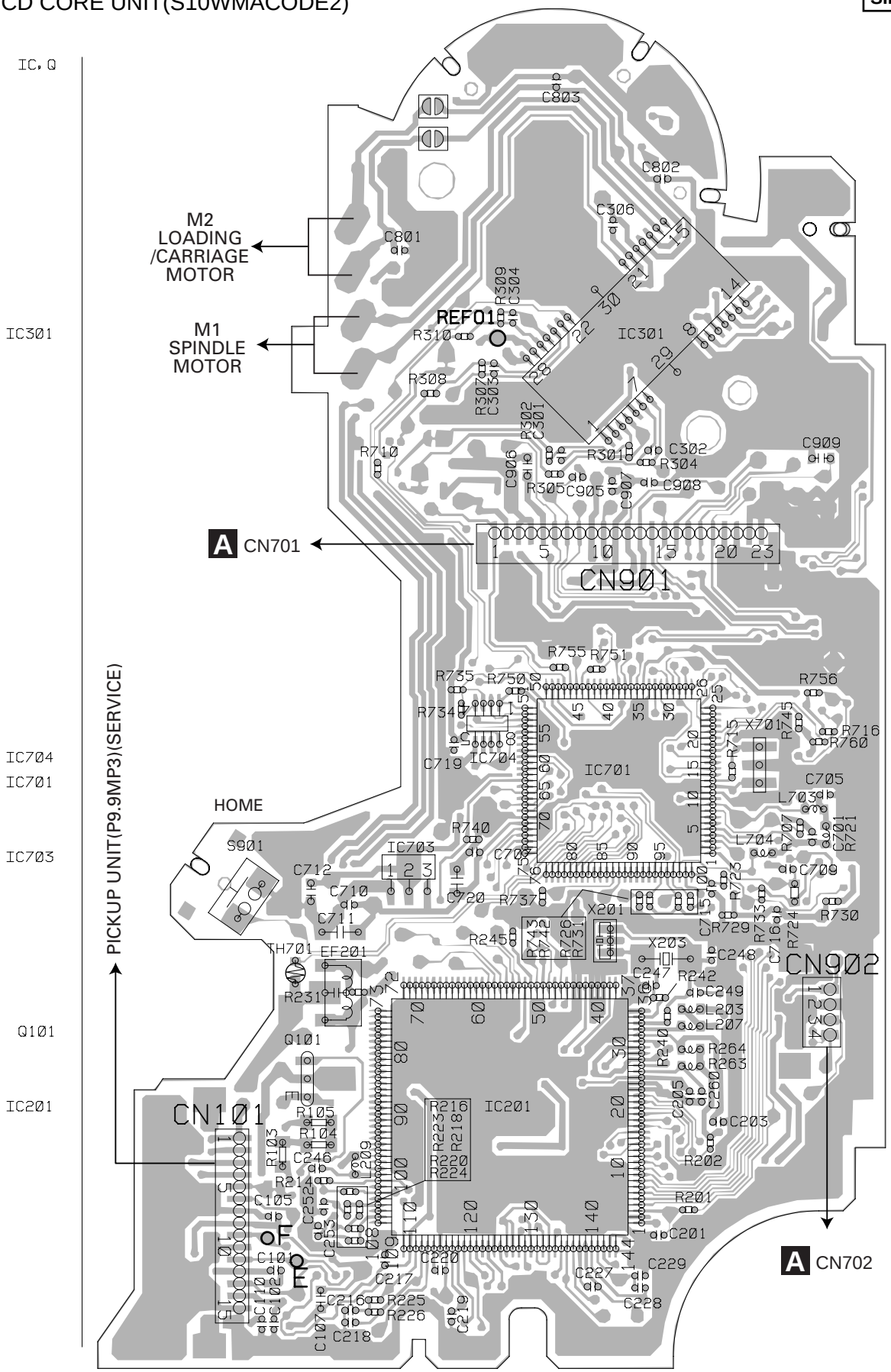
C KEYBOARD UNIT **SIDE B**



4.4 CD MECHANISM MODULE

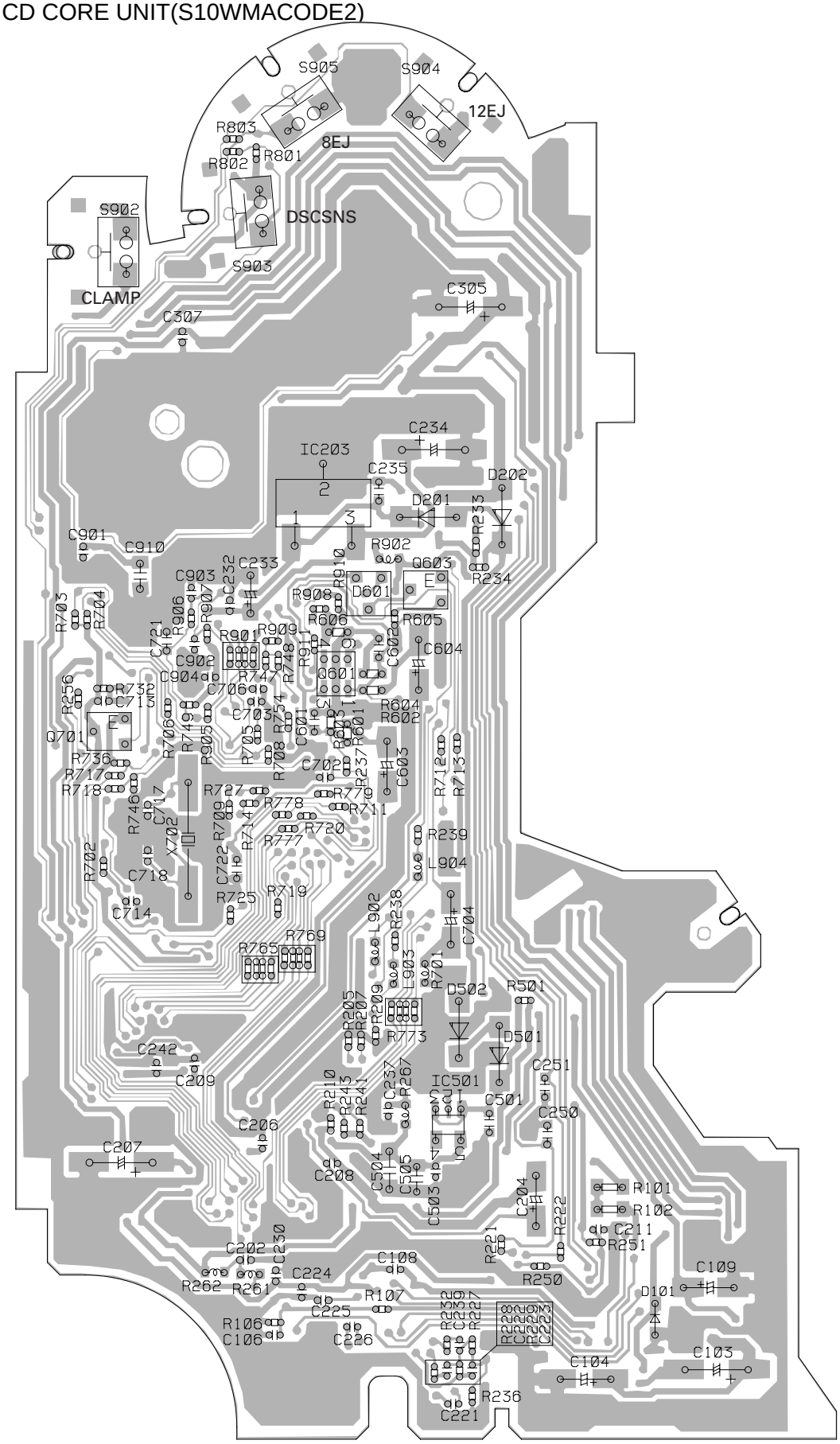
D CD CORE UNIT(S10WMACODE2)

SIDE A



D CD CORE UNIT(S10WMACODE2)

SIDE B



IC, Q

IC203

Q603

Q601

Q701

IC501

5. ELECTRICAL PARTS LIST

MC-Service

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor

RS1/◯S◯◯◯J,RS1/◯◯S◯◯◯J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

A

Unit Number:CWM9265

Unit Name:Tuner Amp Unit

MISCELLANEOUS

Circuit Symbol and No.		Part No.
IC 101	IC	HA12240FP
IC 121	IC	AK7730VT
IC 122	IC	TC7SH08FU
IC 181	IC	PCM1742KE
IC 182	IC	PCM1742KE
IC 183	IC	PCM1742KE
IC 211	IC	NJM4580V
IC 212	IC	NJM4580V
IC 213	IC	NJM4580V
IC 261	IC	NJM2112V
IC 262	IC	NJM4558MD
IC 281	IC	PML011A
IC 301	IC	PAL007A
IC 321	IC	PA2028A
IC 401	IC	NJM2391DL1-33
IC 521	IC	NJM4558V
IC 522	IC	NJM4558V
IC 571	IC	BA6288FS
IC 601	IC	PD5930A
IC 651	IC	S-80835CNMC-B8U
IC 661	IC	TC74VHC08FT
IC 662	IC	TC74VHC08FT
IC 801	IC	TC74VHCT125AFT
IC 941	IC	NJM2391DL1-33
IC 961	IC	NJM2872F05
Q 101	Transistor	UMF23N
Q 281	Transistor	DTC124EU
Q 301	Transistor	DTC124EU
Q 351	Transistor	IMD2A
Q 352	Transistor	HN1C03F
Q 353	Transistor	HN1C03F
Q 354	Transistor	HN1C03F
Q 401	Transistor	IMH1A
Q 402	Transistor	IMH1A
Q 451	Transistor	2SC3052-12
Q 501	Transistor	IMD2A
Q 502	Transistor	2SC3052-12
Q 561	Transistor	2SD1859
Q 562	Transistor	IMD2A
Q 571	Transistor	2SD1760F5

Circuit Symbol and No.		Part No.
Q 572	Transistor	IMD3A
Q 651	Transistor	2SC3052-12
Q 741	Transistor	IMD2A
Q 742	Transistor	2SD2396
Q 743	Transistor	2SD1767
Q 744	Transistor	IMD2A
Q 831	Transistor	2SB808
Q 832	Transistor	DTC114EU
Q 841	Transistor	2SD1760F5
Q 842	Transistor	IMD2A
Q 851	Transistor	2SC3052-12
Q 852	Transistor	2SD1767
Q 853	Transistor	IMD2A
Q 861	Transistor	2SD2396
Q 862	Transistor	IMD2A
Q 871	Transistor	2SD2396
Q 872	Transistor	2SB1243
Q 873	Transistor	RT1N141C-12
Q 881	Transistor	2SD1760F5
Q 882	Transistor	IMD2A
Q 891	Transistor	DTC114EU
Q 911	Transistor	IMX1
Q 921	Transistor	2SA1235A-12
D 301	Diode	MPG06G-6415G50
D 302	Diode	MPG06G-6415G50
D 321	Diode	1SS396
D 322	Diode	1SS396
D 351	Diode	1SS133
D 401	Diode	1SR154-400
D 402	Diode	1SR154-400
D 403	Diode	1SR154-400
D 451	Diode	DAN202U
D 452	Diode	HZS9L(A2)
D 501	Diode	HZU3R9(B1)
D 502	Diode Network	DA204U
D 521	Diode	UDZS3R9(B)
D 522	Diode	RB706F-40
D 561	Diode	HZS11L(B2)
D 571	Diode	1SS133
D 572	Diode	1SS133
D 573	Diode	HZS7L(B3)
D 651	Diode	MA111
D 741	Diode	HZS9L(B1)
D 742	Diode	HZS6L(C1)
D 801	Diode Network	DA204U
D 802	Diode Network	DA204U
D 803	Diode Network	DA204U
D 804	Diode Network	DA204U
D 805	Diode Network	DA204U

Circuit Symbol and No.		Part No.
D 806	Diode Network	DA204U
D 807	Diode Network	DA204U
D 841	Diode	HZS9L(C2)
D 851	Diode	HZU10(B2)
D 852	LED	SML310BA1T
D 861	Diode	HZS9L(B3)
D 862	Diode	DAN202U
D 871	Diode	HZS9L(B2)
D 881	Diode	HZS6L(B1)
D 882	Diode	MPG06G-6415G50
D 901	Diode	MPG06G-6415G50
D 902	Diode	MPG06G-6415G50
D 903	Diode	MPG06G-6415G50
D 911	Diode	HZS7L(C3)
D 912	Diode	HZS7L(A1)
D 921	Diode	DAN202U
D 931	Diode	DAN202U
D 932	Diode	DAP202U
ZNR401	Surge Protector	RCCA-201Q31UA-PI
L 101	Inductor	LCTC4R7K2125
L 121	Inductor	LCTA1R0J2520
L 122	Inductor	LCTA1R0J2520
L 123	Inductor	CTF1379
L 124	Inductor	CTF1379
L 125	Inductor	CTF1389
L 126	Inductor	CTF1379
L 181	Inductor	CTF1379
L 182	Inductor	CTF1379
L 184	Inductor	CTF1379
L 185	Inductor	CTF1379
L 186	Inductor	CTF1379
L 187	Inductor	CTF1379
L 281	Inductor	LCTA2R2J2520
L 321	Ferri-Inductor	LAU101J
L 401	Inductor	LCTA4R7J2520
L 402	Inductor	LAYU1R0K
L 403	Inductor	LAYU100K
L 404	Inductor	LAYU1R0K
L 602	Inductor	LAYU100K
L 661	Inductor	LCTC4R7K1608
L 662	Inductor	LCTC4R7K1608
L 701	Inductor	LAYU100K
L 801	Inductor	LCTC1R0K1608
L 803	Inductor	CTF1379
L 921	Inductor	CTF1530
L 941	Inductor	LCTA1R0J2520
L 942	Inductor	LCTA1R0J2520
X 121	Radiator 16.934MHz	CSS1620
X 601	Radiator 10.00MHz	CSS1475
S 551	Slide Switch(DSP)	CSH1051
VR521	Semi-fixed 10kΩ(B)	CCP1448
FU351	Fuse 3A	CEK1286
MIC521	Microphone	CPM1011
BZ601	Buzzer	CPV1062
Y 401	FM/AM Tuner Unit	CWE1645

RESISTORS

R 101	RS1/16S181J
R 102	RS1/16S181J
R 103	RS1/16S223J
R 104	RS1/16S223J
R 105	RS1/16S102J
R 106	RS1/16S102J
R 107	RS1/16S222J
R 108	RS1/16S150J
R 109	RS1/16S470J
R 110	RS1/16S101J
R 111	RS1/16S101J
R 112	RS1/16S102J
R 113	RS1/16S562J
R 114	RS1/16S332J
R 115	RS1/16S472J
R 121	RS1/16S101J
R 123	RAB4C101J
R 126	RAB4C101J
R 130	RAB4C681J
R 134	RS1/16S562J
R 135	RS1/16S472J
R 136	RS1/16S222J
R 141	RAB4C681J
R 181	RAB4C101J
R 184	RS1/16S101J
R 185	RAB4C101J
R 188	RAB4C101J
R 191	RS1/16S101J
R 192	RAB4C101J
R 195	RAB4C101J
R 198	RS1/16S101J
R 199	RAB4C101J
R 211	RN1/16SE1202D
R 212	RN1/16SE1202D
R 213	RN1/16SE3901D
R 214	RN1/16SE3901D
R 215	RN1/16SE1002D
R 216	RN1/16SE1002D
R 217	RN1/16SE1502D
R 218	RN1/16SE1502D
R 219	RN1/16SE1202D
R 220	RN1/16SE1202D
R 221	RN1/16SE3901D
R 222	RN1/16SE3901D
R 223	RN1/16SE1002D
R 224	RN1/16SE1002D
R 225	RN1/16SE1502D
R 226	RN1/16SE1502D
R 227	RN1/16SE1202D
R 228	RN1/16SE1202D
R 229	RN1/16SE3901D
R 230	RN1/16SE3901D
R 231	RN1/16SE1002D
R 232	RN1/16SE1002D
R 233	RN1/16SE1502D
R 234	RN1/16SE1502D
R 261	RN1/16SE3300D
R 262	RN1/16SE3300D
R 263	RN1/16SE3300D
R 264	RN1/16SE3300D
R 265	RN1/16SE4702D
R 266	RN1/16SE4702D

MC-Service

Circuit Symbol and No.	Part No.	Circuit Symbol and No.	Part No.
R 267	RN1/16SE4702D	R 453	RS1/16S223J
R 268	RN1/16SE4702D	R 454	RS1/16S473J
R 269	RN1/16SE4702D	R 501	RS1/16S682J
R 270	RN1/16SE4702D	R 502	RS1/16S152J
R 271	RS1/16S563J	R 503	RS1/16S683J
R 272	RS1/16S473J	R 504	RS1/16S153J
R 273	RS1/16S473J	R 505	RS1/16S561J
R 274	RS1/16S473J	R 506	RS1/16S222J
R 275	RN1/16SE4702D	R 507	RS1/16S104J
R 276	RN1/16SE4702D	R 521	RS1/16S103J
R 282	RS1/16S682J	R 522	RS1/16S153J
R 283	RS1/16S0R0J	R 523	RS1/16S153J
R 284	RS1/16S0R0J	R 524	RS1/16S103J
R 285	RS1/16S0R0J	R 525	RS1/16S223J
R 286	RS1/16S0R0J	R 526	RS1/16S102J
R 287	RS1/16S0R0J	R 527	RS1/16S563J
R 288	RS1/16S0R0J	R 528	RS1/16S101J
R 289	RS1/16S103J	R 529	RS1/16S152J
R 290	RS1/16S222J	R 530	RS1/16S152J
R 291	RS1/16S332J	R 531	RS1/16S104J
R 301	RS1/16S103J	R 532	RS1/16S222J
R 302	RS1/16S103J	R 533	RS1/16S104J
R 303	RS1/16S103J	R 534	RS1/16S104J
R 304	RS1/16S331J	R 541	RS1/16S102J
R 321	RS1/16S103J	R 542	RS1/16S102J
R 322	RS1/16S103J	R 552	RS1/16S0R0J
R 351	RS1/16S820J	R 553	RS1/16S473J
R 352	RS1/16S820J	R 561	RS1/16S1R0J
R 353	RS1/16S103J	R 562	RS1/16S391J
R 354	RS1/16S103J	R 571	RS1/16S102J
R 355	RS1/16S223J	R 572	RS1/16S102J
R 356	RS1/16S223J	R 573	RS1/16S102J
R 357	RS1/16S471J	R 574	RS1/16S102J
R 358	RS1/16S471J	R 575	RS1/16S471J
R 359	RS1/16S820J	R 576	RS1/16S471J
R 360	RS1/16S820J	R 601	RS1/16S104J
R 361	RS1/16S103J	R 602	RS1/16S472J
R 362	RS1/16S103J	R 603	RS1/16S104J
R 363	RS1/16S223J	R 604	RS1/16S104J
R 364	RS1/16S223J	R 605	RS1/16S104J
R 365	RS1/16S471J	R 606	RS1/16S223J
R 366	RS1/16S471J	R 607	RS1/16S104J
R 367	RS1/16S820J	R 608	RS1/16S473J
R 368	RS1/16S820J	R 609	RS1/16S0R0J
R 369	RS1/16S103J	R 612	RS1/16S104J
R 370	RS1/16S103J	R 613	RS1/16S104J
R 371	RS1/16S223J	R 614	RS1/16S681J
R 372	RS1/16S223J	R 615	RS1/16S681J
R 373	RS1/16S471J	R 616	RS1/16S681J
R 374	RS1/16S471J	R 617	RS1/16S473J
R 375	RS1/16S102J	R 622	RS1/16S102J
R 401	RS1/16S681J	R 642	RS1/16S104J
R 402	RS1/16S681J	R 651	RS1/16S102J
R 403	RS1/16S681J	R 652	RS1/16S222J
R 404	RS1/16S681J	R 653	RS1/16S102J
R 405	RS1/16S681J	R 654	RS1/16S473J
R 406	RS1/16S681J	R 655	RS1/16S183J
R 407	RS1/16S681J	R 661	RAB4C681J
R 408	RAB4C223J	R 662	RS1/16S681J
R 452	RS1/16S103J	R 663	RS1/16S681J

Circuit Symbol and No.	Part No.
R 665	RS1/16S681J
R 666	RS1/16S272J
R 667	RS1/16S272J
R 668	RS1/16S272J
R 669	RS1/16S472J
R 670	RS1/16S472J
R 671	RS1/16S472J
R 701	RS1/16S682J
R 702	RS1/16S473J
R 703	RS1/16S682J
R 704	RS1/16S682J
R 705	RS1/16S682J
R 707	RS1/16S681J
R 708	RS1/16S221J
R 709	RS1/16S221J
R 710	RS1/16S221J
R 711	RS1/16S221J
R 712	RS1/16S221J
R 713	RS1/16S221J
R 714	RS1/16S681J
R 741	RD1/4PU331J
R 743	RS1/16S471J
R 801	RS1/16S104J
R 802	RS1/16S104J
R 803	RS1/16S104J
R 804	RS1/16S222J
R 805	RS1/16S222J
R 806	RS1/16S222J
R 811	RS1/16S222J
R 813	RS1/16S222J
R 815	RS1/16S104J
R 816	RS1/16S104J
R 820	RS1/16S222J
R 823	RS1/16S222J
R 825	RS1/16S473J
R 831	RS1/16S473J
R 832	RS1/16S222J
R 833	RS1/16S103J
R 841	RS1/10S1R0J
R 843	RD1/4PU271J
R 851	RAB4C221J
R 852	RS1/16S103J
R 853	RS1/16S103J
R 854	RS1/16S181J
R 855	RS1/16S181J
R 864	RS1/16S561J
R 865	RS1/16S561J
R 872	RS1/16S681J
R 873	RS1/16S561J
R 874	RD1/4PU222J
R 875	RS1/16S822J
R 881	RS1/16S333J
R 882	RS1/16S821J
R 883	RS1/16S821J
R 891	RS1/16S103J
R 892	RS1/16S104J
R 911	RS1/16S104J
R 912	RS1/16S103J
R 913	RS1/16S473J
R 914	RS1/16S473J
R 915	RS1/16S472J
R 921	RS1/16S102J
R 922	RS1/16S472J
R 923	RS1/16S472J
R 924	RS1/16S153J
R 931	RS1/16S103J
R 932	RS1/16S104J
R 933	RS1/16S102J
R 934	RS1/16S102J

MC-Service

CAPACITORS

C 101	CKSRYB104K16
C 103	CCSRCH102J50
C 104	CCSRCH102J50
C 105	CKSRYB473K50
C 121	CKSRYB104K16
C 122	CKSYB106K6R3
C 123	CKSRYB104K16
C 124	CKSYB106K6R3
C 125	CKSRYB104K16
C 126	CKSRYB104K16
C 127	CKSRYB104K16
C 128	CKSYB106K6R3
C 131	CCSRCH220J50
C 132	CKSQYB682K50
C 133	CCSRCH220J50
C 134	CKSRYB104K16
C 135	CCSRCH100D50
C 136	CCSRCH100D50
C 137	CCSRCH220J50
C 138	CKSYB106K6R3
C 139	CCSRCH102J50
C 140	CCSRCH151J50
C 141	CCSRCH102J50
C 142	CKSRYB103K50
C 143	CCSRCH102J50
C 144	CCSRCH390J50
C 146	CCSRCH220J50
C 147	CCSRCH220J50
C 148	CCSRCH220J50
C 150	CCSRCH150J50
C 153	CKSRYB102K50
C 156	CCSRCH102J50
C 183	CKSYB106K6R3
C 184	CCSRCH102J50
C 185	CKSYB106K6R3
C 186	CCSRCH102J50
C 187	CKSYB106K6R3
C 189	CCSRCH102J50
C 190	CKSYB106K6R3
C 192	CKSYB106K6R3
C 193	CCSRCH102J50
C 194	CKSYB106K6R3
C 196	CCSRCH102J50
C 197	CKSYB106K6R3
C 199	CKSYB106K6R3
C 200	CCSRCH102J50
C 201	CKSYB106K6R3
C 202	CCSRCH101J50

Circuit Symbol and No.		Part No.
C 211		CEAL4R7M16
C 212		CEAL4R7M16
C 213		CCSRCH181J50
C 214		CCSRCH181J50
C 215		CCSRCH821J50
C 216		CCSRCH821J50
C 217		CEALNP4R7M16
C 218		CEALNP4R7M16
C 219		CEAL4R7M16
C 220		CEAL4R7M16
C 221		CCSRCH181J50
C 222		CCSRCH181J50
C 223		CCSRCH821J50
C 224		CCSRCH821J50
C 225		CEALNP4R7M16
C 226		CEALNP4R7M16
C 227		CEAL4R7M16
C 228		CEAL4R7M16
C 229		CCSRCH181J50
C 230		CCSRCH181J50
C 231		CCSRCH821J50
C 232		CCSRCH821J50
C 233		CEALNP4R7M16
C 234		CEALNP4R7M16
C 235		CKSRYB104K16
C 236		CKSRYB104K16
C 237		CKSRYB104K16
C 261		CCSRCH102J50
C 262		CCSRCH102J50
C 263		CCSRCH470J50
C 264		CCSRCH470J50
C 265		CCSRCH470J50
C 266		CCSRCH470J50
C 267		CKSQYB225K10
C 268		CKSQYB225K10
C 269		CKSRYB105K10
C 270		CKSRYB104K16
C 271		CSZS100M10
C 272		CSZS100M10
C 281		CKSRYB472K50
C 282		CKSRYB472K50
C 283		CSZS100M10
C 284		CKSRYB104K16
C 285		CKSQYB225K10
C 286		CKSRYB104K16
C 287		CKSQYB225K10
C 288		CKSQYB225K10
C 289		CSZS100M10
C 290		CKSQYB225K10
C 291		CKSRYB105K10
C 292		CKSQYB225K10
C 293		CKSRYB104K16
C 294		CKSRYB104K16
C 301		CFTNA224J50
C 302		CFTNA224J50
C 303		CFTNA224J50
C 304		CFTNA224J50
C 305		CEHAR330M10
C 306	3300µF/16V	CCH1486
C 307		CKSRYB104K16

Circuit Symbol and No.	Part No.
C 308	CEHAR100M16
C 309	CKSQYB225K10
C 310	CKSQYB225K10
C 321	CKSRYB105K10
C 322	CKSRYB105K10
C 323	CKSRYB105K10
C 324	CKSRYB105K10
C 325	CKSRYB105K10
C 326	CKSRYB105K10
C 327	CEJQ4R7M35
C 328	CEJQ101M16
C 329	CASAQ3R3M16
C 330	CEJQ100M16
C 331	CKSYB684K16
C 332	CEJQ220M16
C 333	CKSRYB105K10
C 334	CEJQ330M25
C 335	CEJQ330M25
C 336	CEJQ330M25
C 337	CEJQ330M25
C 351	CEJQ100M50
C 352	CEJQ100M50
C 353	CKSRYB222K50
C 354	CKSRYB222K50
C 355	CEJQ100M50
C 356	CEJQ100M50
C 357	CKSRYB222K50
C 358	CKSRYB222K50
C 359	CEJQ100M50
C 360	CEJQ100M50
C 361	CKSRYB222K50
C 362	CKSRYB222K50
C 363	CEJQ220M16
C 364	CKSRYB473K50
C 401	CKSYB475K10
C 402	CKSRYB103K50
C 403	CEJQ470M6R3
C 404	CKSRYB103K50
C 405	CEJQ101M16
C 406	CKSRYB103K50
C 407	CEJQ220M6R3
C 408	CCSRCH101J50
C 409	CKSRYB103K50
C 410	CKSYB475K10
C 411	CCSRCH102J50
C 501	CKSQYB225K10
C 502	CEJQ101M6R3
C 503	CCSRCH681J50
C 521	CKSRYB105K10
C 522	CEALNP4R7M16
C 523	CEALNP4R7M16
C 524	CKSRYB105K10
C 525	CKSRYB474K10
C 526	CKSRYB104K16
C 527	CCSRCH101J50
C 528	CKSRYB105K10
C 529	CEAL100M16
C 530	CKSRYB105K10
C 531	CKSRYB105K6R3
C 532	CKSRYB105K6R3

Circuit Symbol and No.		Part No.
C 541		CKSRYB224K10
C 542		CKSRYB224K10
C 561		CEJQ100M16
C 562		CKSRYB103K50
C 563		CKSRYB103K50
C 571		CCSRCH101J50
C 572		CCSRCH102J50
C 573		CEJQ220M16
C 574		CCSRCH101J50
C 575		CKSRYB104K16
C 576		CKSRYB224K10
C 601		CCSRCH180J50
C 602		CCSRCH220J50
C 604		CCSRCH470J50
C 605		CEJQ4R7M35
C 606		CKSRYB103K50
C 652		CKSRYB104K16
C 653		CKSRYB105K10
C 661		CKSRYB104K16
C 662		CKSRYB104K16
C 703	470µF/10V	CCH1438
C 741		CKSRYB473K25
C 742		CCSRCH102J50
C 743		CEJQ101M16
C 744		CKSRYB473K25
C 745		CEHAR101M10
C 801		CKSRYB473K25
C 802		CKSRYB103K50
C 803		CKSRYB102K50
C 805		CEJQ101M16
C 815		CKSRYB104K16
C 816		CKSRYB104K16
C 842		CKSRYB103K50
C 843		CEJQ330M16
C 844		CCSRCH101J50
C 851		CKSRYB473K25
C 861		CEJQ221M10
C 862		CKSRYB472K50
C 863		CEJQ2R2M50
C 871		CEJQ221M10
C 872		CKSRYB103K50
C 873		CEJQ101M16
C 881		CEAL470M6R3
C 882		CKSRYB103K50
C 883		CKSRYB472K50
C 884	470µF/16V	CCH1331
C 885	470µF/16V	CCH1331
C 891		CKSRYB105K10
C 911		CKSRYB104K16
C 942		CCSRCH101J50
C 943		CKSRYB102K50
C 944		CEAL101M6R3
C 945		CEAL220M6R3
C 946		CKSRYB105K6R3
C 948		CKSRYB104K16
C 949		CKSYB475K10
C 961		CEAL470M6R3
C 962		CKSRYB104K16
C 964		CKSRYB104K16
C 965		CKSYB475K10

Circuit Symbol and No.		Part No.

B

Unit Number:CWS1389
Unit Name:Switch Unit

S 1	Switch(CLOSE)	CSN1051
S 2	Switch(OPEN)	CSN1052

C

MC-Service

Unit Number:CWM9270
Unit Name:Keyboard Unit

MISCELLANEOUS

IC 1802	IC	S-818A33AUC-BGN
IC 1805	IC	PD5943A
IC 1806	IC	PD8124A
IC 1807	IC	PD6468A
IC 1808	IC	TC7WH32FK
IC 1901	IC	RS-140
Q 1806	Transistor	UMD2N
Q 1906	Transistor	2SC3052-12
D 1803	Diode	1SS355
D 1901	LED	SML310BA1T
D 1902	LED	SML310BA1T
D 1903	LED	SML310BA1T
D 1904	LED	SML310BA1T
D 1905	LED	SML310BA1T
D 1906	LED	SML310BA1T
D 1907	LED	SML310BA1T
D 1908	LED	SML310BA1T
D 1909	LED	SML310BA1T
D 1910	LED	SML310BA1T
D 1911	LED	SML310BA1T
D 1912	LED	SML310BA1T
D 1913	LED	SML310BA1T
D 1914	LED	SML310BA1T
D 1915	LED	SML310BA1T
D 1916	LED	SML310BA1T
D 1917	LED	SML310BA1T
L 1801	Inductor	CTF1530
L 1802	Inductor	CTF1484
L 1803	Inductor	CTF1530
L 1804	Inductor	CTF1399
X 1801	Radiator 10.0MHz	CSS1577
S 1901	Push Switch	CSG1155
S 1902	Push Switch	CSG1155
S 1903	Push Switch	CSG1155
S 1904	Push Switch	CSG1155
S 1905	Push Switch	CSG1155
S 1906	Push Switch	CSG1155
S 1907	Push Switch	CSG1155
S 1908	Push Switch	CSG1155
S 1909	Push Switch	CSG1155
S 1910	Push Switch	CSG1155
S 1911	Push Switch	CSG1155
S 1912	Encoder	CSD1104
S 1913	Switch	CSX1065
S 1914	Push Switch	CSG1155

Circuit Symbol and No.	Part No.
RESISTORS	
R 1807	RS1/16SS222J
R 1808	RS1/16SS222J
R 1809	RS1/16SS101J
R 1810	RS1/16SS101J
R 1811	RS1/16SS473J
R 1812	RS1/16SS104J
R 1815	RS1/16SS101J
R 1816	RS1/16SS101J
R 1817	RS1/16SS101J
R 1818	RS1/16SS101J
R 1819	RAB4CQ101J
R 1820	RS1/16SS222J
R 1821	RS1/16SS154J
R 1822	RS1/16SS473J
R 1824	RS1/16SS473J
R 1825	RS1/16SS473J
R 1826	RS1/16SS473J
R 1827	RS1/16SS473J
R 1828	RS1/16SS473J
R 1829	RS1/16SS473J
R 1830	RS1/16SS473J
R 1831	RS1/16SS102J
R 1832	RS1/16SS0R0J
R 1834	RAB4CQ473J
R 1835	RAB4CQ101J
R 1836	RAB4CQ101J
R 1837	RAB4CQ101J
R 1838	RAB4CQ101J
R 1839	RAB4CQ101J
R 1840	RAB4CQ101J
R 1841	RAB4CQ101J
R 1842	RAB4CQ101J
R 1843	RAB4CQ101J
R 1844	RAB4CQ101J
R 1845	RS1/16SS473J
R 1846	RS1/16SS473J
R 1847	RS1/16SS473J
R 1849	RS1/16SS392J
R 1850	RS1/16SS682J
R 1851	RAB4CQ101J
R 1852	RS1/16SS101J
R 1853	RS1/16SS101J
R 1854	RS1/16SS0R0J
R 1903	RS1/16SS274J
R 1904	RS1/16SS103J
R 1905	RS1/16SS121J
R 1906	RS1/16SS2R2J
R 1916	RS1/16SS104J
R 1917	RS1/16SS223J
R 1918	RS1/16SS103J
R 1919	RS1/16S221J
R 1921	RS1/16S221J
R 1923	RS1/16S221J
R 1925	RS1/16S221J
R 1927	RS1/16S821J
R 1929	RS1/16S221J
R 1931	RS1/16S221J
R 1933	RS1/16S221J
R 1935	RS1/16S221J
R 1938	RS1/16SS222J
R 1939	RS1/16SS332J
R 1940	RS1/16SS822J
R 1941	RS1/16SS4702D
R 1942	RS1/16SS102J
R 1943	RS1/16SS102J
R 1945	RS1/16SS103J
R 1946	RS1/16SS221J
CAPACITORS	
C 1806	CSZSP4R7M10
C 1808	CKSRYB474K10
C 1809	CKSSYB103K16
C 1810	CKSSYB103K16
C 1814	CKSSYB473K10
C 1816	CKSSYB103K16
C 1817	CSZSP4R7M10
C 1822	CKSSYB103K16
C 1826	CKSSYB103K16
C 1827	CKSSYB103K16
C 1833 10µF	CCG1138
C 1901	CKSRYB104K16
C 1902	CKSRYB104K16
C 1903	CKSRYB104K16
C 1904	CKSRYB104K16
C 1905	CKSRYB104K16
C 1906	CKSRYB104K16
C 1907	CKSRYB104K16
C 1908	CKSRYB104K16
C 1909	CKSRYB104K16
C 1910	CKSRYB104K16
C 1911	CKSRYB104K16
C 1912	CKSRYB104K16
C 1913	CKSRYB104K16
C 1914	CKSRYB104K16
C 1915	CKSRYB104K16
C 1916	CKSRYB104K16
C 1917	CKSRYB104K16
C 1918	CKSSYB104K10
C 1919	CKSSYB104K10
C 1920	CSZSR100M16

D

Unit Number:CWX2953
Unit Name:CD CORE UNIT(S10WMACODE2)

MISCELLANEOUS

IC 201	IC	UPD63761GJ
IC 203	IC	NJM2391DL1-33
IC 301	IC	BA5835FM
IC 501	IC	S-L2980A15MC-C6A
IC 701	IC	PE5423A
IC 703	IC	S-812C33AUA-C2N
Q 101	Transistor	2SB1132
Q 701	Transistor	UN2111

Circuit Symbol and No.		Part No.
D 101	Diode	1SS355
L 203	Inductor	CTF1389
L 207	Inductor	CTF1389
L 209	Inductor	CTF1389
L 703	Inductor	CTF1389
L 902	Inductor	CTF1306
L 903	Inductor	CTF1306
L 904	Inductor	CTF1306
X 702	Resonator 4.00MHz	CSS1654
S 901	Switch(HOME)	CSN1051
S 902	Switch(CLAMP)	CSN1051
S 903	Spring Switch(DSCSNS)	CSN1052
S 904	Switch(12EJ)	CSN1051
S 905	Switch(8EJ)	CSN1051

RESISTORS

R 101	RS1/10S1R5J
R 102	RS1/10S1R5J
R 103	RS1/10S1R5J
R 104	RS1/10S1R5J
R 105	RS1/10S1R5J
R 107	RS1/16SS0R0J
R 201	RS1/16SS102J
R 202	RS1/16SS333J
R 205	RS1/16SS473J
R 207	RS1/16SS473J
R 209	RS1/16SS473J
R 210	RS1/16SS0R0J
R 214	RS1/16SS472J
R 216	RS1/16SS472J
R 218	RS1/16SS472J
R 220	RS1/16SS472J
R 221	RS1/16SS103J
R 222	RS1/16SS103J
R 223	RS1/16SS0R0J
R 224	RS1/16SS0R0J
R 225	RS1/16SS103J
R 226	RS1/16SS393J
R 227	RS1/16SS562J
R 228	RS1/16SS122J
R 229	RS1/16SS472J
R 231	RS1/16SS0R0J
R 232	RS1/16SS122J
R 233	RS1/16SS0R0J
R 237	RS1/16SS221J
R 238	RS1/16SS221J
R 239	RS1/16SS221J
R 240	RS1/16SS0R0J
R 241	RS1/16SS333J
R 243	RS1/16SS333J
R 245	RS1/16SS333J
R 250	RS1/16SS0R0J
R 256	RS1/16SS0R0J
R 261	RS1/16S0R0J
R 262	RS1/16S0R0J
R 263	RS1/16S0R0J
R 264	RS1/16S0R0J
R 267	RS1/16S0R0J
R 301	RS1/16SS183J

Circuit Symbol and No.	Part No.
R 302	RS1/16SS822J
R 304	RS1/16SS183J
R 305	RS1/16SS822J
R 307	RS1/16SS183J
R 308	RS1/16SS183J
R 309	RS1/16SS183J
R 310	RS1/16SS183J
R 501	RS1/16SS0R0J
R 701	RS1/16S0R0J
R 702	RS1/16SS0R0J
R 703	RS1/16SS104J
R 704	RS1/16SS104J
R 705	RS1/16SS221J
R 706	RS1/16SS221J
R 707	RS1/16SS0R0J
R 708	RS1/16SS221J
R 709	RS1/16SS473J
R 710	RS1/16SS102J
R 711	RS1/16SS102J
R 712	RS1/16SS102J
R 713	RS1/16SS102J
R 714	RS1/16SS473J
R 715	RS1/16SS101J
R 716	RS1/16SS472J
R 717	RS1/16SS221J
R 718	RS1/16SS221J
R 719	RS1/16SS221J
R 720	RS1/16SS471J
R 721	RS1/16S0R0J
R 724	RS1/16S473J
R 725	RS1/16SS222J
R 726	RS1/16SS103J
R 727	RS1/16SS473J
R 729	RS1/16SS223J
R 730	RS1/16SS473J
R 731	RS1/16SS104J
R 732	RS1/16SS104J
R 733	RS1/16SS104J
R 735	RS1/16SS473J
R 737	RS1/16SS104J
R 740	RS1/16SS473J
R 743	RS1/16SS104J
R 745	RS1/16SS473J
R 746	RS1/16SS104J
R 747	RS1/16SS102J
R 750	RS1/16SS473J
R 751	RS1/16SS102J
R 754	RS1/16SS102J
R 755	RS1/16SS102J
R 756	RS1/16SS104J
R 765	RAB4CQ221J
R 769	RAB4CQ221J
R 773	RAB4CQ221J
R 777	RS1/16SS221J
R 778	RS1/16SS221J
R 779	RS1/16SS221J
R 901	RAB4CQ221J
R 902	RS1/16S0R0J
R 905	RS1/16SS221J
R 906	RS1/16SS221J

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Circuit Symbol and No.		Part No.
R 909		RS1/16SS0R0J
R 911		RS1/16SS0R0J

CAPACITORS

C 101		CKSSYB104K10
C 102		CKSSYB104K10
C 103	100µF/16V	CCH1504
C 104	47µF/6.3V	CCH1506
C 105		CKSSYB104K10
C 106		CCSSCH101J50
C 107		CKSRYB224K16
C 108		CKSSYB104K10
C 110		CKSSYB104K10
C 201		CKSSYB471K50
C 202		CKSSYB104K10
C 203		CKSSYB104K10
C 205		CKSSYB104K10
C 207	220µF/4V	CCH1590
C 208		CKSSYB104K10
C 209		CKSSYB104K10
C 216		CKSSYB332K50
C 217		CKSSYB104K10
C 218		CKSSYB223K16
C 219		CKSSYB104K10
C 220		CKSSYB103K16
C 221		CKSSYB104K10
C 222		CCSSCH560J50
C 223		CCSSCH5R0C50
C 224		CKSSYB104K10
C 225		CKSSYB103K16
C 226		CCSSCH680J50
C 227		CCSSCH470J50
C 228		CKSSYB682K25
C 230		CKSSYB104K10
C 232		CKSSYB104K10
C 233	10µF/6.3V	CCH1470
C 234	220µF/4V	CCH1590
C 235		CKSRYB224K16
C 237		CKSSYB104K10
C 239		CCSSCH330J50
C 242		CKSSYB104K10
C 246		CKSSYB104K10
C 249		CKSSYB221K50
C 250		CKSRYB102K50
C 251		CKSRYB102K50
C 260		CKSSYB104K10
C 301		CKSSYB221K50
C 302		CKSSYB221K50
C 303		CKSSYB472K25
C 304		CKSSYB103K16
C 305	100µF/16V	CCH1504
C 306		CKSSYB104K10
C 307		CKSSYB104K10
C 501		CKSRYB224K16
C 505		CKSQYB475K6R3
C 701		CKSSYB104K10
C 702		CKSSYB471K50
C 703		CKSSYB103K16
C 704	4.7µF/25V	CCH1592

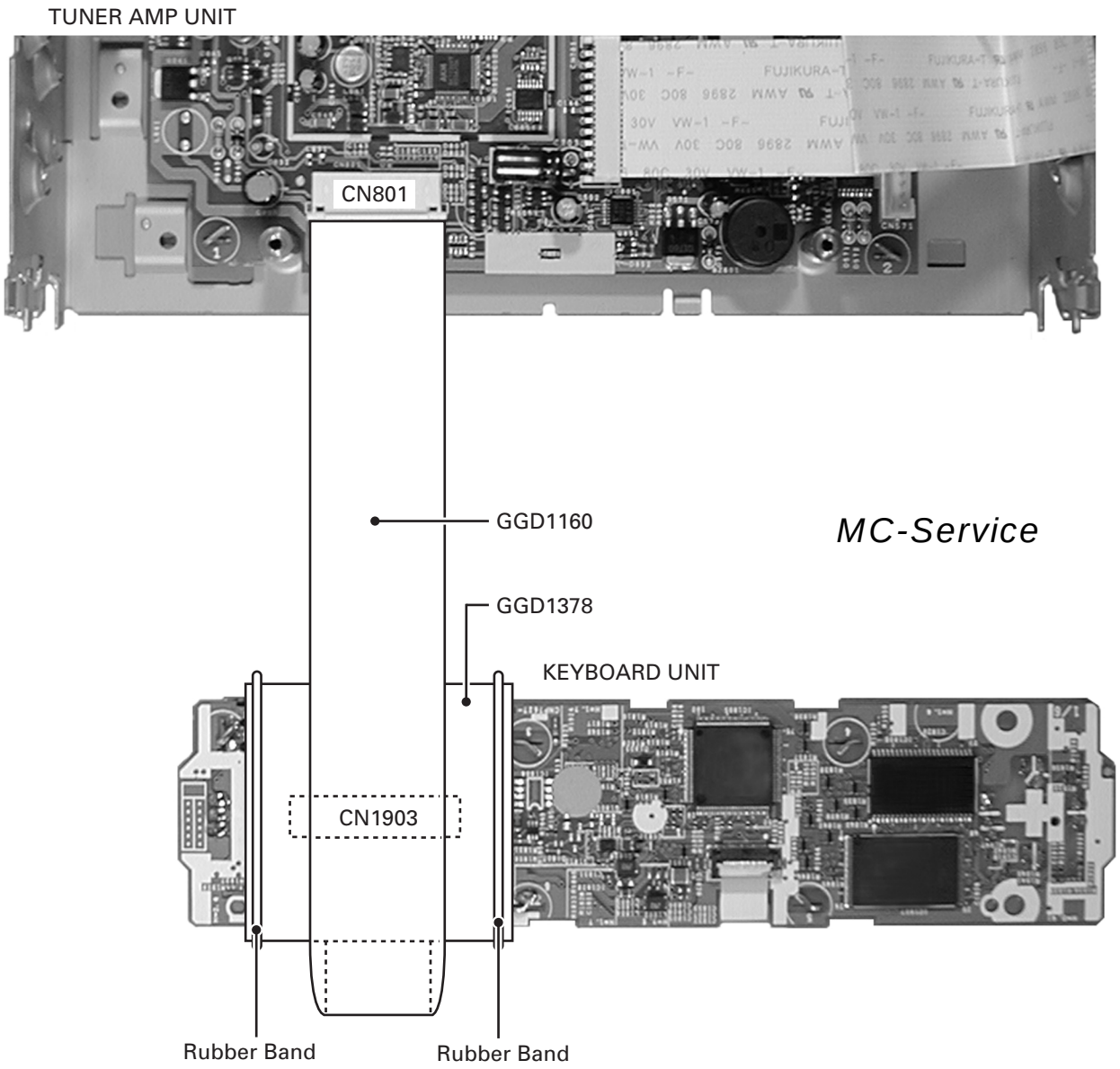
Circuit Symbol and No.		Part No.
C 706		CKSSYB104K10
C 707		CKSSYB104K10
C 712		CKSRYB224K16
C 713		CKSSYB104K10
C 714		CKSSYB104K10
C 716		CKSSYB103K16
C 717		CCSSCH180J50
C 718		CCSSCH180J50
C 720		CKSQYB225K10
C 722		CKSRYB105K10
C 903		CKSSYB471K50
C 906		CKSRYB224K16
C 910		CKSQYB225K10

Miscellaneous Parts List

	Pickup Unit(P9.9MP3)(Service)	CXX1805
M 1	Motor Unit(SPINDLE)	CXB6007
M 2	Motor Unit(LOADING/CARRIAGE)	CXB8933
M 561	Fan Motor	CXM1288
M 571	Motor Unit(FLAP)	CXC2204

6. ADJUSTMENT

6.1 JIG CONNECTION DIAGRAM



6.2 CD ADJUSTMENT

1) Cautions on adjustments

• In this product the single voltage (3.3V) is used for the regulator. The reference voltage is the REFO1 (1.65V) instead of the GND.
If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:
a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.
b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.
c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

• Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

• For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

• In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

• The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1k ohms in series.

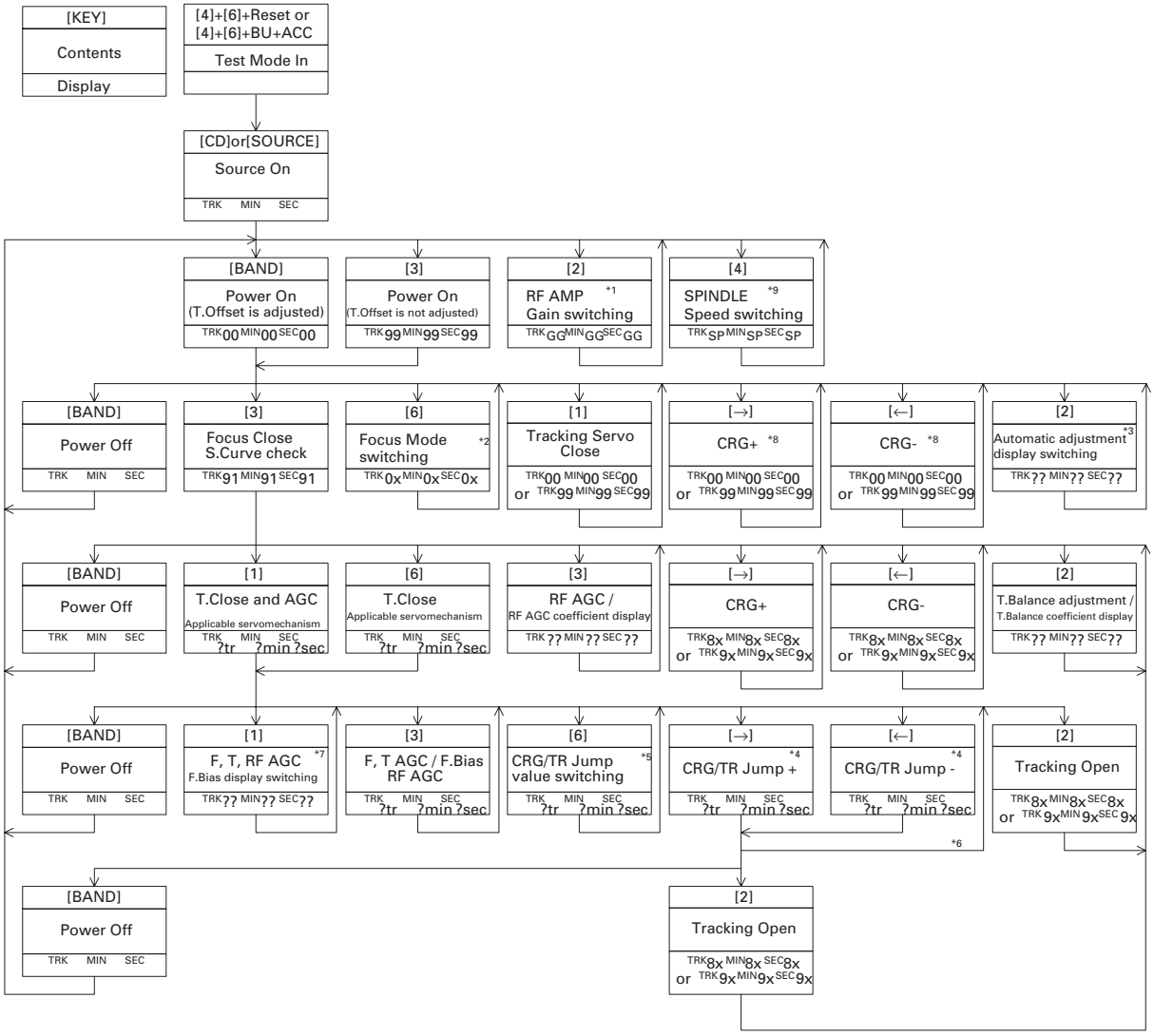
• The load and eject operation is not guarantied with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode

This mode is used to adjust the CD mechanism module.
• To enter the test mode.
While pressing the 4 and 6 keys at the same time, reset.
• To exit from the test mode.
Turn off the ACC and back up.

Notes:
a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.
b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.
c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.
d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.
e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0dB, and the auto-adjustment values are reset to the default settings.

● Flow Chart



*1) TYP (TRK MIN SEC) → -6dB (TRK 06 MIN 06 SEC 06) → -12dB (TRK 12 MIN 12 SEC 12)

*2) Focus Close (TRK 00 MIN 00 SEC 00 / TRK 99 MIN 99 SEC 99) → S.Curve ckeck setting (TRK 01 MIN 01 SEC 01) → F EQ measurement setting (TRK 02 MIN 02 SEC 02)

*3) F.Offset Display → T.Offset Display → Switch to the order of the original display

*4) 1TR / 32TR / 100TR

*5) Single TR → 32TR → 100TR → CRG Move
9x(8x) : 91(81) 92(82) 93(83) 94(84)

*6) Only at the time of CRG Move, 100TR Jump

*7) TRK/MIN/SEC → F.AGC → T.AGC → F.Bias → RF AGC

*8) CRG motor voltage = 2[V]

*9) TYP(1X) (TRK MIN SEC) → 2X (TRK 22 MIN 22 SEC 22) → 1X (TRK 11 MIN 11 SEC 11)

As for the double speed (2x), audio output cannot be supported.

TYP(2X) (TRK MIN SEC) → 1X (TRK 11 MIN 11 SEC 11) → 2X (TRK 22 MIN 22 SEC 22)

[Key]	Operation Test Mode
[BAND]	Power On/Off
[→]	CRG + / TR Jump + (Direction of the external surface)
[←]	CRG - / TR Jump - (Direction of the internal surface)
[1]	T.CLS and AGC and Applicable servomechanism / AGC, AGC display switching
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T.Open
[3]	F.Close, S.Curve / Rough Servo and RF AGC / F, T, RF AGC
[4]	SPDL 1X/2X switching As for the double speed (2x), audio output cannot be supported.
[5]	Error Rate measurement 1st-ON : ERR count beginning(30Sec) 2nd-ON : BER display data[%]
[6]	F. Mode switching / Tracking Close / CRG, TR Jump switching

6.3 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

• **Note :**
The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

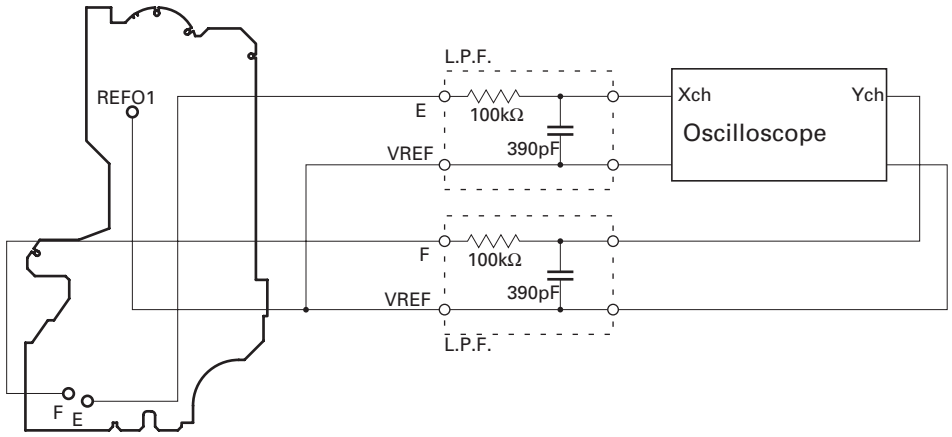
• **Purpose :**
To check that the grating is within an acceptable range when the PU unit is changed.

• **Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• **Method :**

• Measuring Equipment	• Oscilloscope, Two L.P.F.
• Measuring Points	• E, F, REFO1
• Disc	• TCD-782
• Mode	• TEST MODE

CD CORE UNIT(S10WMACODE2)



• **Checking Procedure**
1. In test mode, load the disc and switch the 3V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• **Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC

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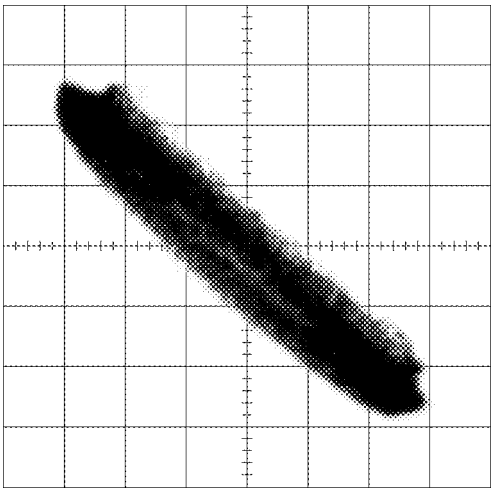
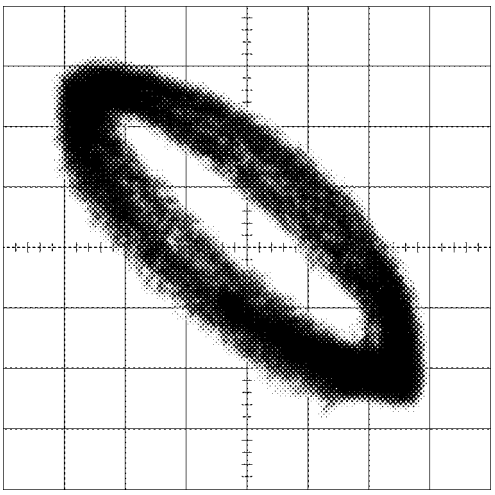
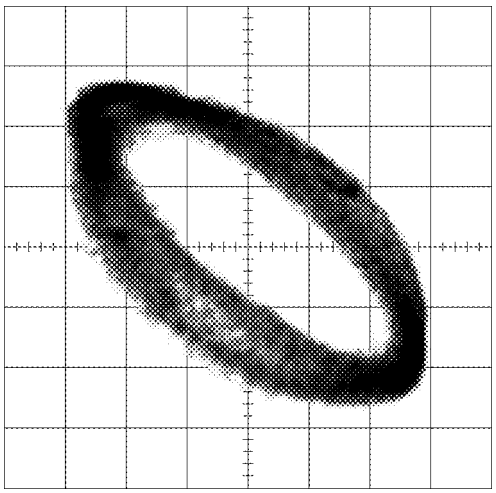
0°



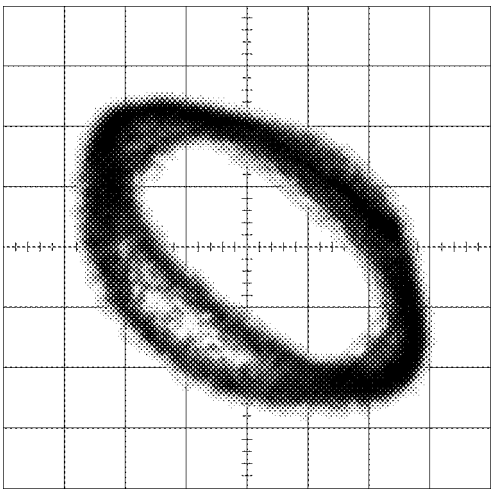
30°



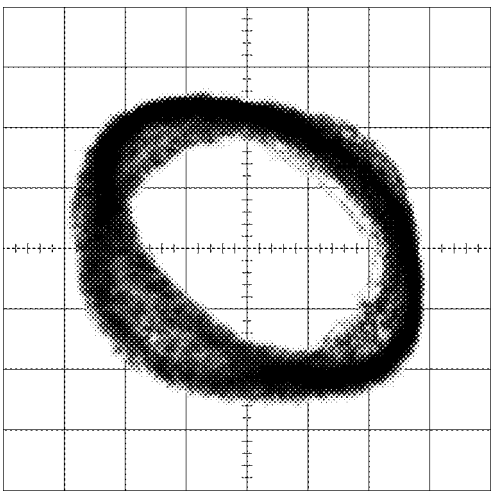
45°



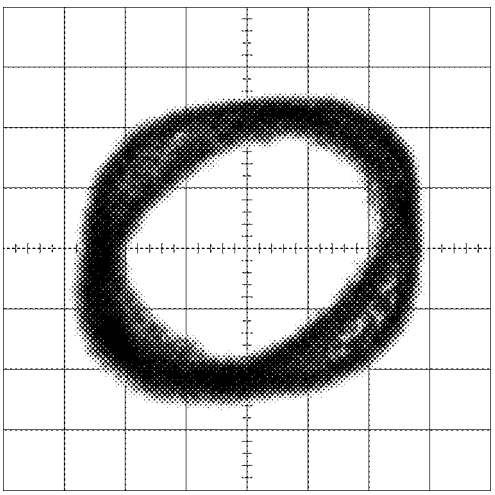
60°



75°



90°



6.4 ERROR MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR–xx	ERR–xx	E–xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Communication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

6.5 OEL SCREENSAVER STUDIO LKA TO LKD APPLICATION

"OEL Screensaver Studio" is an application to create OEL display image file. The customer write the image file on a CD-R disc and install it to car audio. This function is similar to PC link-kit (CD-PC1).
"OEL Screensaver Studio" is available to the public on the PIONEER Home Page.
This software (GGV1168) is added LKA to LKD file conversion function to original "OEL Screensaver Studio".

● **How to check:**
1. Set up GGV1168 application.
2. Confirm the LKA file (ent_disp.lka) is converted to LKD file correctly or not.
Please see a Readme.txt in the GGV1168 or help file of "OEL Screensaver Studio" for more information.

6.6 SYSTEM MICROCOMPUTER TEST PROGRAM

● **PCL output**
In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN (Pin 86) terminal to H.
The clock signal is output from the PCL terminal (Pin 37).
The frequency of the clock signal is 312.500kHz that is one 32nd of the fundamental frequency.
The clock signal should be 312.500kHz ± 13Hz.
If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the two screws and then remove the Case.

● Removing the CD Mechanism Module (Fig.1)

1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

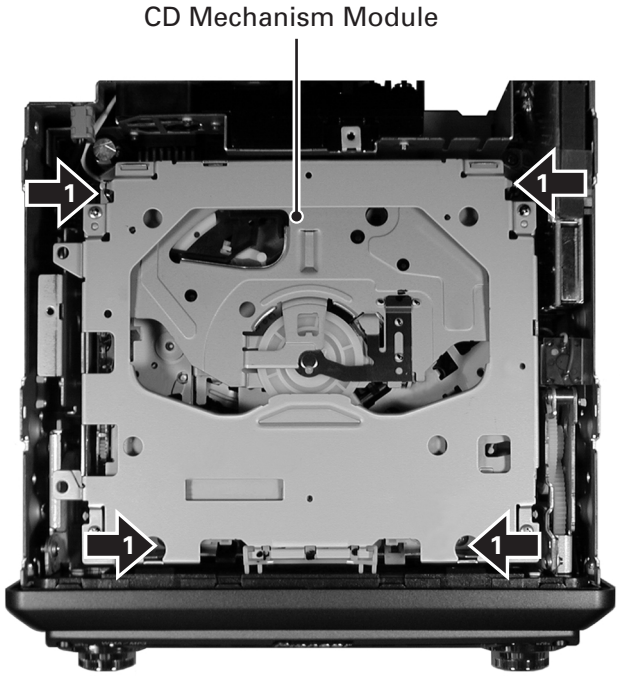


Fig.1

● Removing the Grille Assy (Fig.2)

1 Remove the four screws.

Disconnect the connector and then remove the Grille Assy.

Fig.2

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● Removing the Tuner Amp Unit (Fig.3)

1. Remove the three screws.
2. Remove the screw.
3. Straighten the tabs at three locations indicated.
4. Remove the screw and then remove the Tuner Amp Unit.

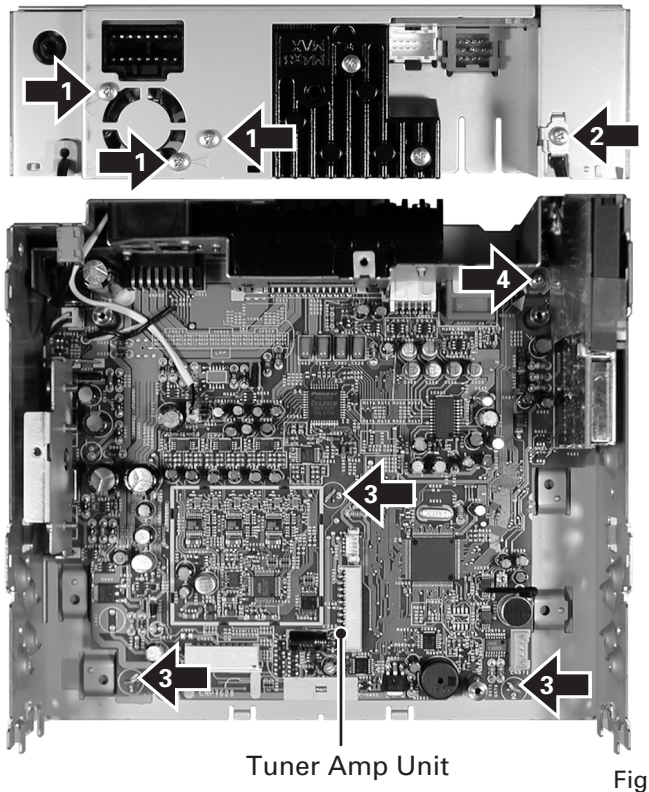

Fig.3

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● Notes when assembling (Fig.4)

1. The Holder hook touches the Sub Grille Assy.
2. The hole Ⓐ of Lighting Conductor is inserted in the portion shown by the arrow of Sub Grille Assy.
3. The hole Ⓑ of Lighting Conductor is inserted in the portion shown by the arrow of Sub Grille Assy.
4. Please do not remove Knob as much as possible from Encoder.

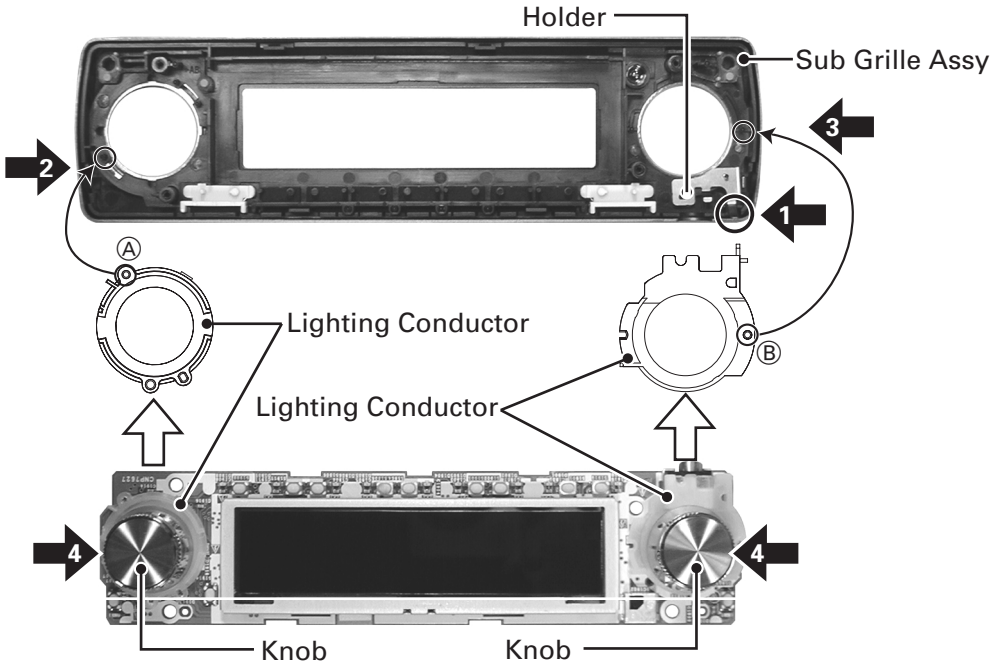
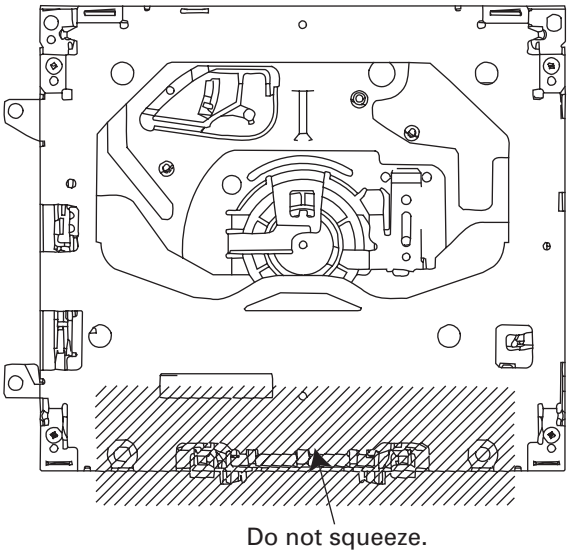


Fig.4

● How to hold the Mechanism Unit

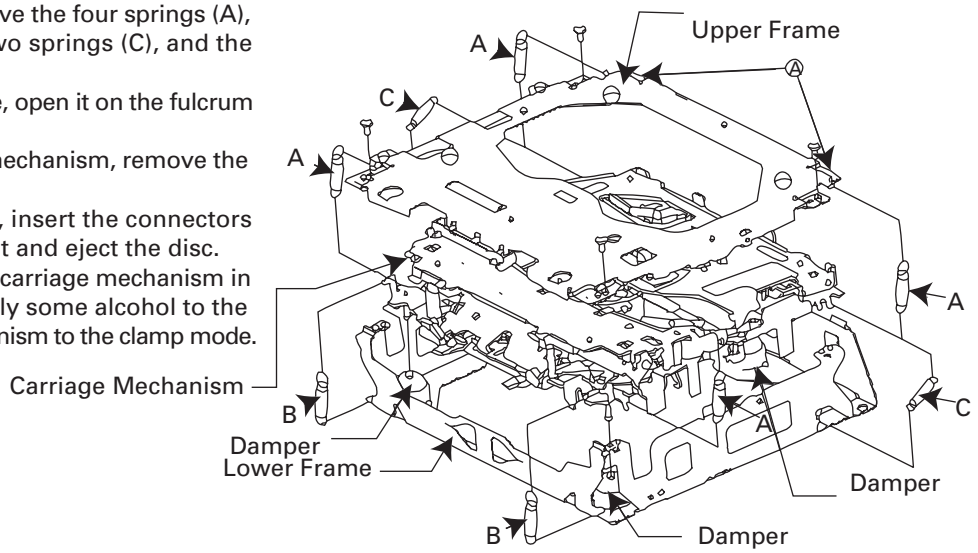
1. Hold the top and bottom frame.
2. Do not squeeze top frame's front portion too tight, because it is fragile.



● Removing the Upper and Lower Frames

1. With a disc clamped, remove the four springs (A), the two springs (B), the two springs (C), and the four screws.
2. To remove the upper frame, open it on the fulcrum A.
3. While lifting the carriage mechanism, remove the three dampers.
4. With the frames removed, insert the connectors coming from the main unit and eject the disc.

Caution: Before installing the carriage mechanism in the frames, be sure to apply some alcohol to the dampers and set the mechanism to the clamp mode.



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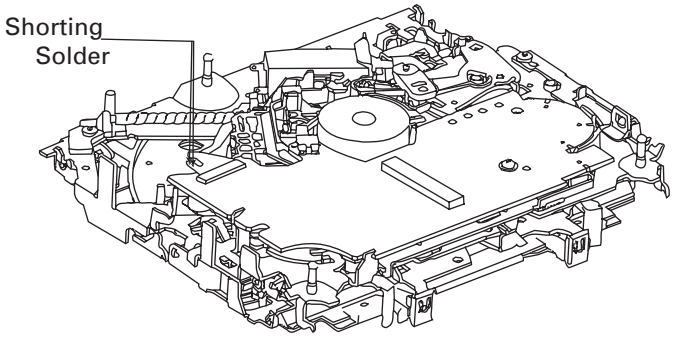
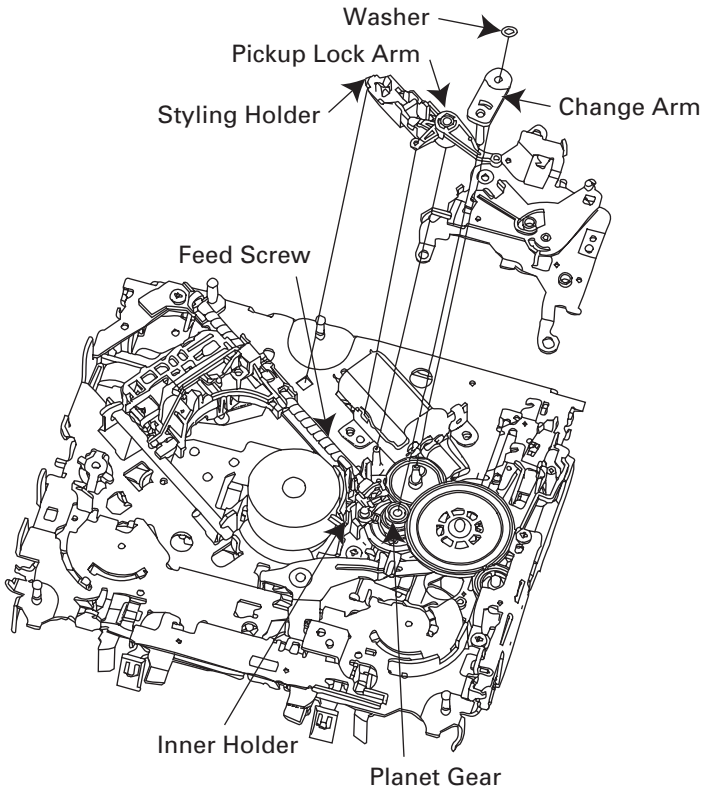
● Removing the Pickup Unit

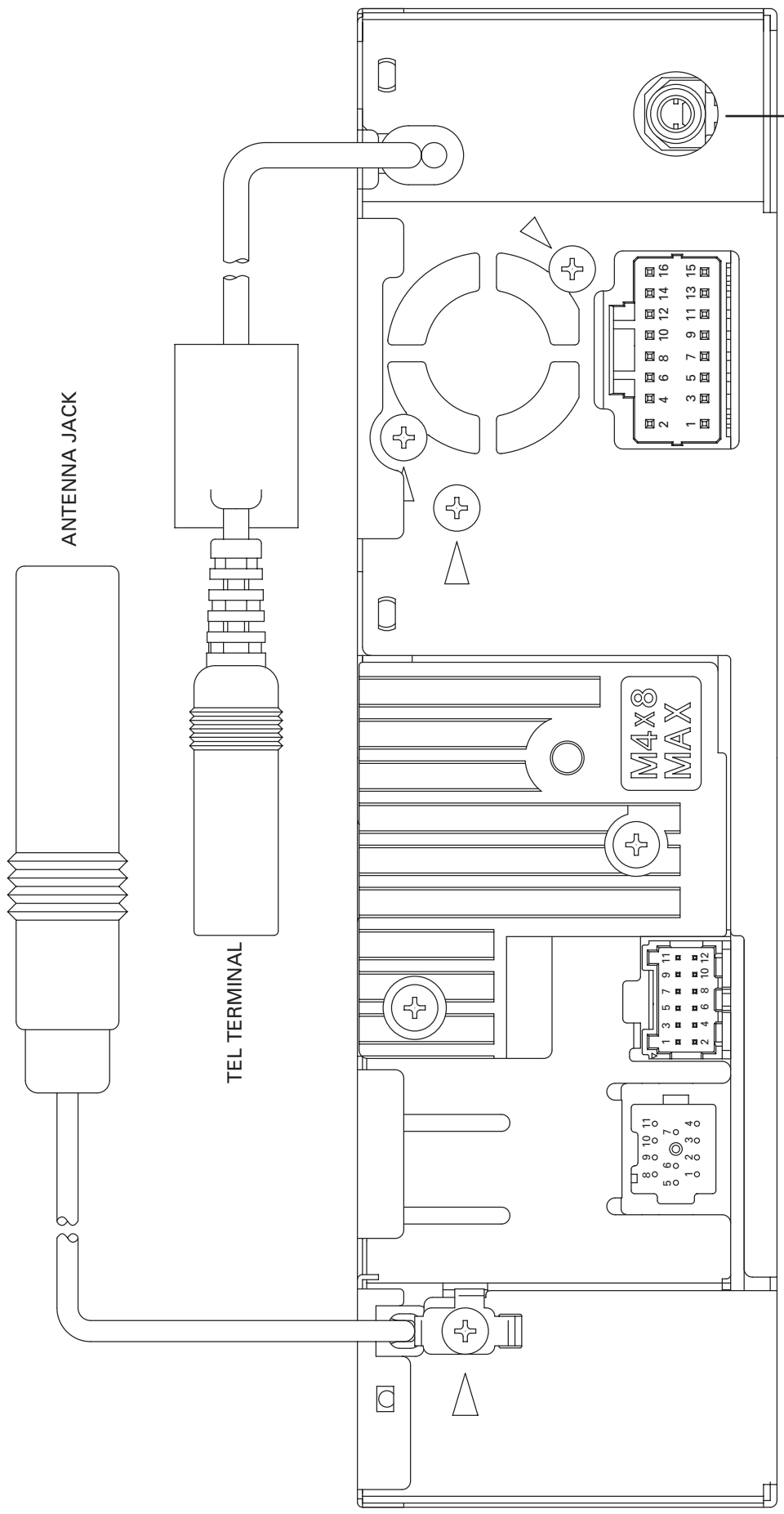
1. Apply shorting solder to the Pickup flexible cable. Disconnect the cable.
2. Set the mechanism to the clamp mode.
3. Remove the lead wires from the inner holder.
4. Remove the washer, styling holder, change arm, and pickup lock arm.
5. While releasing from the hook of the inner holder, lift the end of the feed screw.

Caution: In assembling, move the planet gear to the load/eject position before setting the feed screw in the inner holder.





7.1.2 CONNECTOR FUNCTION DESCRIPTION



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7.2 IC

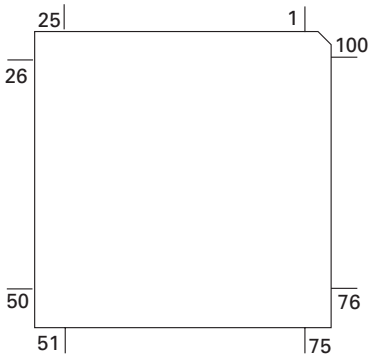
PD5930A	S-80835CNMC-B8U	PE5423A
NJM4580V	NJM2872F05	UPD63761GJ
PCM1742KE	PD5943A	S-812C33AUA-C2N
HA12240FP	PD8124A	BA5835FM
AK7730VT	TC7WH32FK	S-L2980A15MC-C6A
NJM2112V	PD6468A	

● Pin Functions(PD5930A)

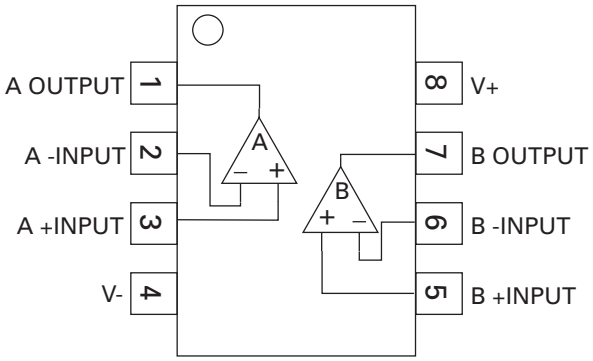
Pin No.	Pin Name	I/O	Function and Operation
1	SYSPW	O	System power control output
2	DSPPW	O	DSP : Power control output
3	DSPOUT	O	DSP : Data output
4	DSPIN	I	DSP : Data input
5	DSPCK	O	DSP : Clock output
6	BYTE		External data bus width change input
7	CNVSS		Processor mode change input
8	TELIN	I	Telephone mute input
9	NC		Not used
10	$\overline{\text{RESET}}$	I	Reset input
11	XOUT	O	Clock output
12	VSS		GND
13	XIN	I	Clock input
14	VCC		Power supply input
15	$\overline{\text{NMI}}$		Not used
16	$\overline{\text{RCK}}$	I	RDS : Clock input
17	$\overline{\text{LDET}}$	I	RDS : PLL lock detection input
18	NC		Not used
19	RX2	I	IP-BUS : Data input 2
20	OELPW	O	OEL power supply output
21	NC		Not used
22	PEE	O	PEE sound output
23	CSENSOUT	O	Flap open/close output
24	$\overline{\text{BRST}}$	O	P-BUS : Reset output
25	$\overline{\text{BRXEN}}$	I/O	P-BUS : Reception enable input / output
26	$\overline{\text{BSRQ}}$	I	P-BUS : Service request input
27	RX	I	IP-BUS : Data input
28	TX	O	IP-BUS : Data output
29	BSO	O	P-BUS : Data output
30	BSI	I	P-BUS : Data input
31	BSCK	O	P-BUS : Clock output
32	DSPMOD	I	DSP : STD / NW select input
33	DPDT	O	Display data output
34	KYDT	I	Key data input
35, 36	ROT1, 0	I	Rotary encoder pulse input1, 0
37	PCL	O	Output for clock adjustment
38	SWVDD	O	GRILLE : Chip enable output
39	KEYD	I	Wired remote control input
40	FLPILM	O	Inside of flap illumination output
41	ILMPW	O	Illumination output
42	EJTIN	I	Eject key input
43	GDTC1	O	Picture rewriting output 1
44	$\overline{\text{RDS57K}}$	I	RDS : 57kHz pulse count input
45	$\overline{\text{RDSLK}}$	I	RDS : lock signal input
46	RDT	I	RDS : data input
47	$\overline{\text{GDTC2}}$	O	Picture rewriting output 2
48,49	NC		Not used
50	FOPNSW	I	Flap open sense input
51	FCLSSW	I	Flap close sense input
52	FLPCLS	O	Flap motor close output
53	FLPOPN	O	Flap motor open output

Pin No.	Pin Name	I/O	Function and Operation
54	FLPPW	O	Flap motor driver power ON/OFF output
55	RECEIVE	O	Not used
56	DSPCS	O	DSP : Interface chip select output
57	DSPRQ	O	DSP : Interface request output
58	DSPRDY	I	DSP : Data write ready signal input
59	DSPDRDY	I	DSP : Data read ready signal input
60	VCC		Power supply input
61	EVOLCS	O	Electronic volume chip select output
62	VSS		GND
63	LRCKOK	I	DSP : Clock stable information input
64	MCKRQ	I	Master clock request input
65	EMPIN	I	CD emphasis information input
66	SMODE	I	Slave / master select input
67	NC		Not used
68	DALMON	O	For consumption current reduction output
69	$\overline{\text{TUNPCE2}}$	O	TUNER : Chip enable output(EEPROM)
70	TUNPCE1	O	TUNER : Chip enable output(PLL)
71	ROMCS	O	ROM correction chip select output
72	ASENS	I	ACC sense input
73	BSENS	I	Back up sense input
74	ROMCK	O	ROM correction clock output
75	ROMDATA	I/O	ROM correction data input/output
76	NC		Not used
77	INTRST	O	DSP : System reset output
78	DSPRST	O	DSP : Reset output
79	IPPW	O	IPBUS : Driver power supply control output
80	ASENBO	O	IPBUS : Slave ACC sense output
81	$\overline{\text{ISENS}}$	I	Illumination sense input
82,83	MODEL1,2	I	Model select input
84	NC		Not used
85	MUTE	O	System mute output
86	TESTIN	I	Test program input
87-90	NC		Not used
91	DSENS	I	Detach sense input
92	KEYAD	I	Wired remote control input
93	ASLIN	I	ASL input
94	AVSS		AD translation power supply input terminal
95	SL	I	TUNER : Signal level input
96	VREF		A/D converter reference voltage
97	AVCC		A/D converter power supply input terminal
98	TUNPDI	I	TUNER : PLL communication data input
99	TUNPDO	O	TUNER : Data output(PLL)
100	TUNPCK	O	TUNER : Clock output(PLL)

* PD5930A



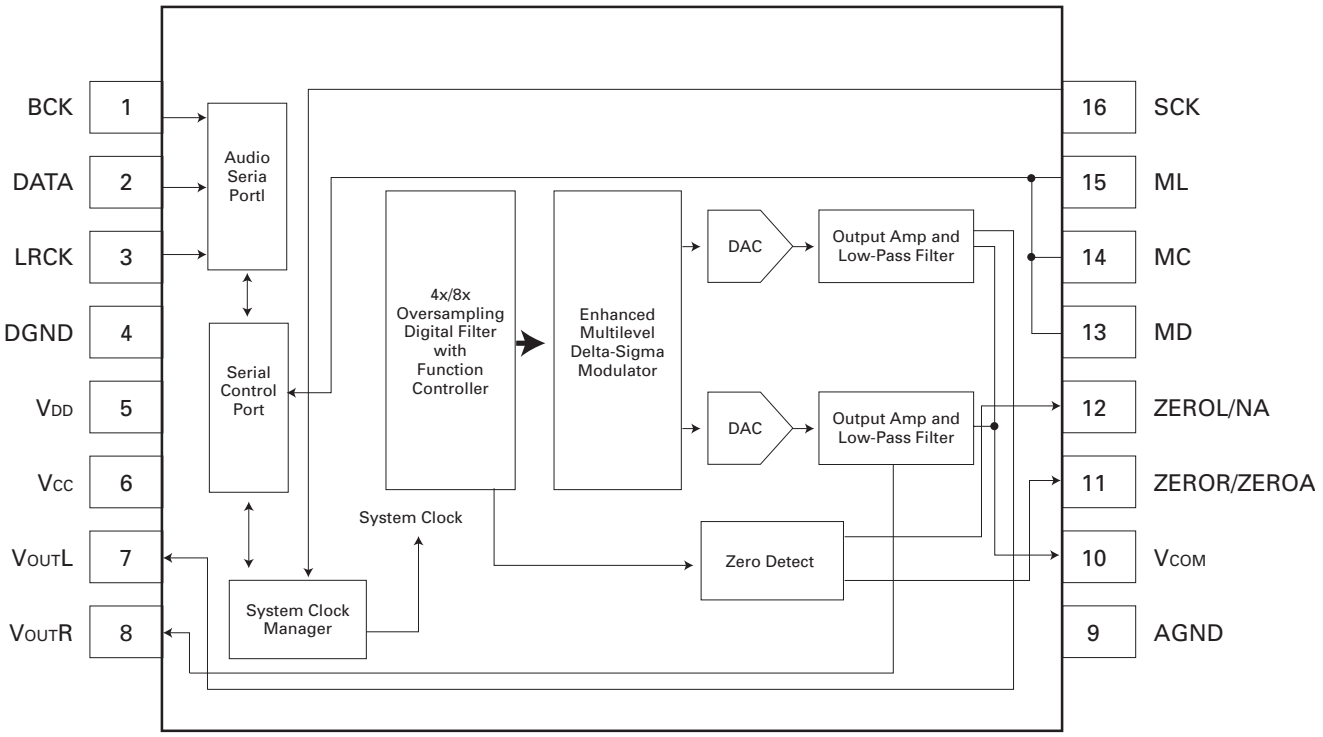
* NJM4580V



IC's marked by * are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

MC-Service

PCM1742KE



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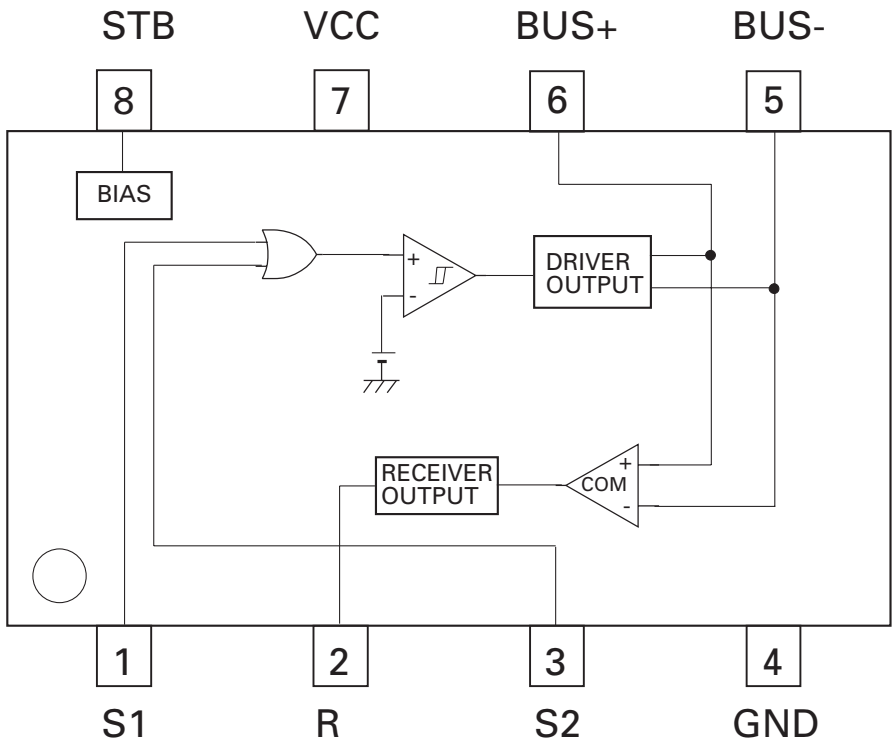
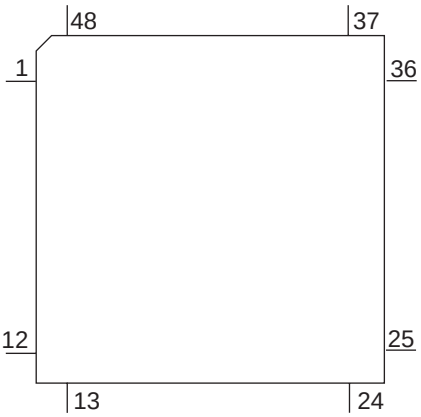


● Pin Functions(AK7730VT)

Pin No.	Pin Name	I/O	Function and Operation
1	EESEL	I	Control Mode select pin (Pull down)
2	JX0/SDIN4A	I	External conditional jump pin / DSP serial data input pin (Pull down)
3, 4	SDIN3, 2/JX1, 2	I	DSP serial data input pin / External condition jump pin (Pull down)
5	SDIN1	I	DSP serial data input pin (Pull down)
6	CKS1	I	Master clock (XTI) select pin (Pull down)
7	BVSS		Silicon substrate potential 0V
8	DVSS		Ground pin for digital section 0.0V
9	DVDD		Power supply pin for digital section 3.3V (typ)
10-13	SDOUT4-1	O	DSP Serial data output pin
14	BITCLK_I	I	Serial bit clock input pin
15	LRCLK_I	I	LR channel select clock input pin
16	BITCLK_O	O	Serial bit clock output pin
17	LRCLK_O	O	LR channel select clock output pin
18	RDY	O	Data write ready output pin for microcomputer interface
19	DRDY	O	Output data ready pin for Microcomputer interface
20	$\overline{CS}$	I	Chip select pin for Microcomputer interface (pull down)
21	DVDD		Power supply pin for digital section 3.3V (typ)
22	DVSS		Ground pin for digital section 0V
23, 24	CLKO1, 2	O	Clock output pin
25	XTO	O	Crystal oscillator output pin
26	XTI	I	Master clock input pin
27	DVSS		Ground pin for digital section 0V
28	DVDD		Power supply pin for digital section 3.3V (typ)
29	SMODE	I	Slave / Master mode selector pin
30	SO	O	Serial data output pin for Microcomputer interfaces
31	SI	I	Microcomputer interface serial data input and serial data output control pin
32	SCLK	I	Microcomputer interface serial data clock pin
33	$\overline{RQ}$	I	Microcomputer interface write request pin
34	$\overline{S\_RESET}$	I	System Reset pin
35	$\overline{INIT\_RESET}$	I	Reset pin (for initialization)
36	CKS0	I	Master clock (XTI) select pin (pull down)
37	LFLT		Filter connection pin for PLL
38	AVSS		Analog ground 0V
39, 40	AVDD		Power supply pin for analog section 3.3V (typ)
41	VREFH	I	Analog reference voltage input pin
42	VCOM	O	Common voltage
43	VREFL	I	Analog reference voltage input pin for low-level
44	AVSS		Analog ground 0V
45	AINR-	I	ADC Rch analog inverted input pin
46	AINR+	I	ADC Rch analog non-inverted input pin
47	AINL-	I	ADC Lch analog inverted input pin
48	AINL+	I	ADC Lch analog non-inverted input pin

* AK7730VT



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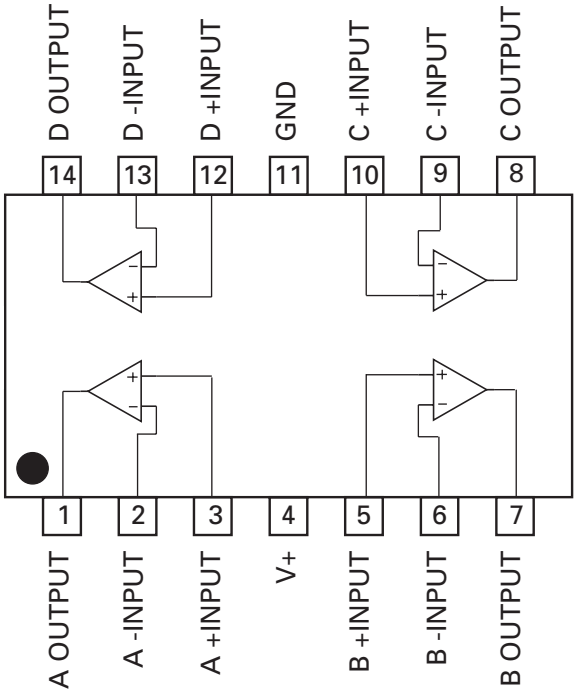

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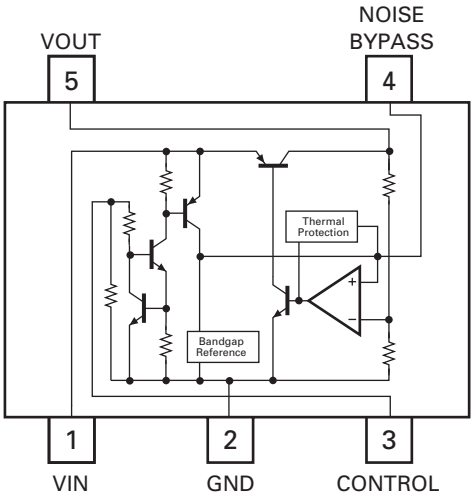
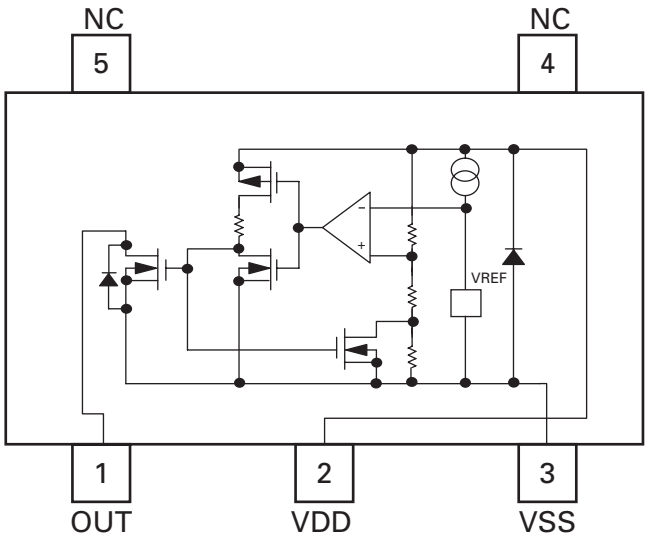


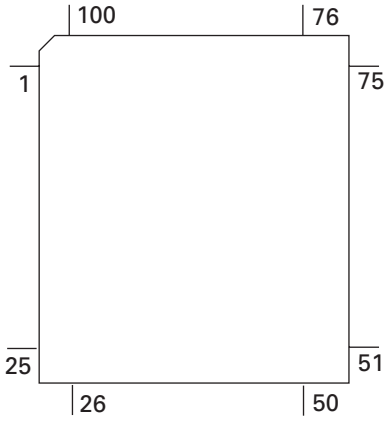
*S-80835CNMC-B8U



● Pin Functions (PD5943A)

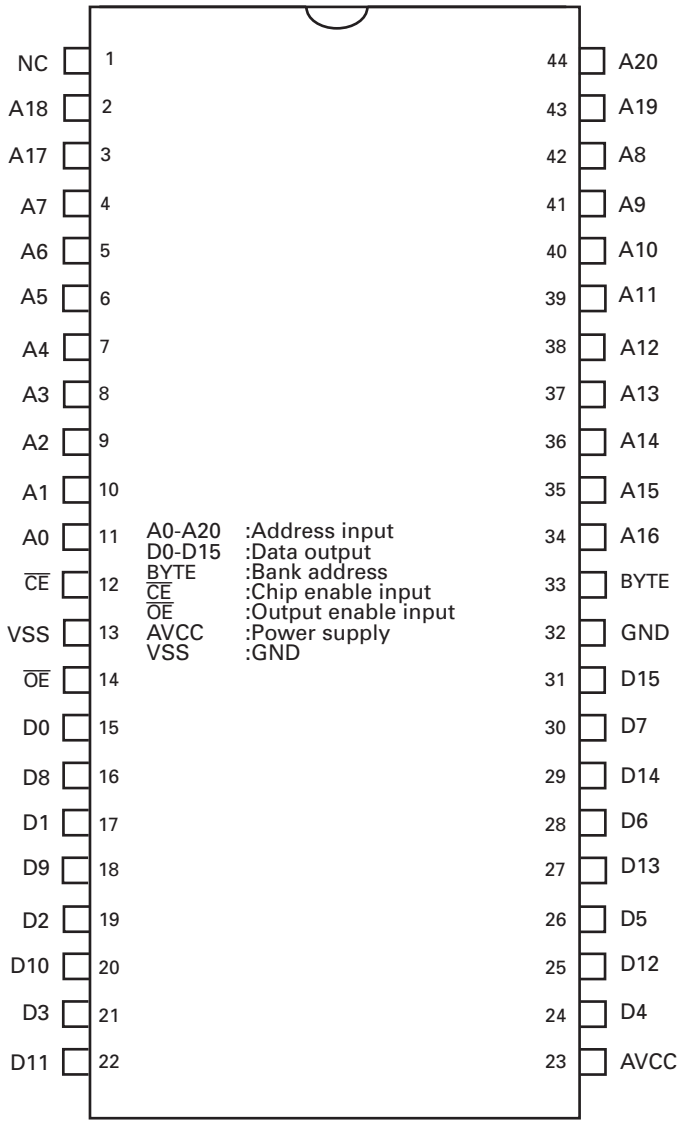
Pin No.	Pin Name	I/O	Format	Function and Operation
1	$\overline{\text{ROMCS}}$	O		Not used OPEN
2	$\overline{\text{FLSTBY}}$	O		Not used OPEN
3	$\overline{\text{FL120N}}$	O		Not used OPEN
4	$\overline{\text{FLBUSY}}$	I		Flash memory busy input
5	REM	I		Remote control reception input
6	BYTE	I		GND connection
7	CNVSS	I		GND connection
8, 9	NC			Not used OPEN
10	$\overline{\text{RESET}}$	I		Pull up
11	XOUT	O		Crystal oscillating element connection pin
12	VSS1			GND connection
13	XIN	I		Crystal oscillating element connection pin
14	VCC1			VDD connection
15	$\overline{\text{NMI}}$	I		Pull up
16,17	ROT1,ROT2	I		Rotary encoder pulse input
18,19	NC			Not used
20	CD_DATA	O	C	Cathode driver pulse output
21	NC			Not used OPEN
22	CKC	O	C	Cathode driver pulse output
23	NC			Not used OPEN
24	LS	O	C	Line synchronous signal
25	NC			Not used OPEN
26	CKD	O	C	Data transfer and driver clock output
27	DPDT	I		Display data communication input
28	KYDT	O	N	Key data communication output
29	D1_L	O	C	Display data MSB output
30	NC			Not used
31	CLK1	I		UART1 clock input
32	ILMD	O	C	Dual illumination output
33	D0_L	O	C	Display data LSB output
34	NC			Not used
35	CLK0	I		UART0 clock input
36	NC	O		Not used OPEN
37	$\overline{\text{READY}}$	I		Not used Pull up
38	NC			Not used OPEN
39	$\overline{\text{HOLD}}$	I		Pull up
40	NC			OPEN
41	BCLK			Not used Pull up
42	$\overline{\text{RD}}$	O	C	Read strobe output
43	NC			OPEN
44	$\overline{\text{WR}}$	O	C	Not used OPEN
45-48	$\overline{\text{CS3}}$-$\overline{\text{CS0}}$	O	C	External ROM chip select output
49	A19	O	C	Address bus 19 output
50	NC	O	C	OPEN
51-59	A17-9	O	C	Address bus 17-9 output
60	VCC2			VDD connection
61	A8	O	C	Address bus 8 output
62	VSS2			GND connection
63-69	A7-1	O	C	Address bus 7-0 output
70	NC	O	C	OPEN
71-86	D15-0	I/O	C	Data bus 15-0 input / output
87-90	$\overline{\text{KD1}}$-$\overline{\text{KD4}}$	I	C	Key data input
91-93	$\overline{\text{KS1}}$-$\overline{\text{KS3}}$	O	C	Key strobe output
94	AVSS			GND connection
95	$\overline{\text{FL12ON}}$	O	C	Not used OPEN
96	VREF			GND connection
97	AVCC			VCC connection
98	ROMDT	I/O		Not used
99	NC			OPEN
100	ROMCK	O		Not used

* PD5943A

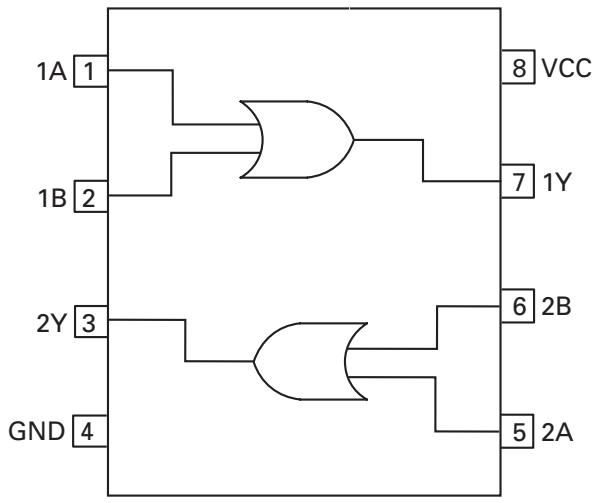


Format	Meaning
C	CMOS
N	Nch open drain

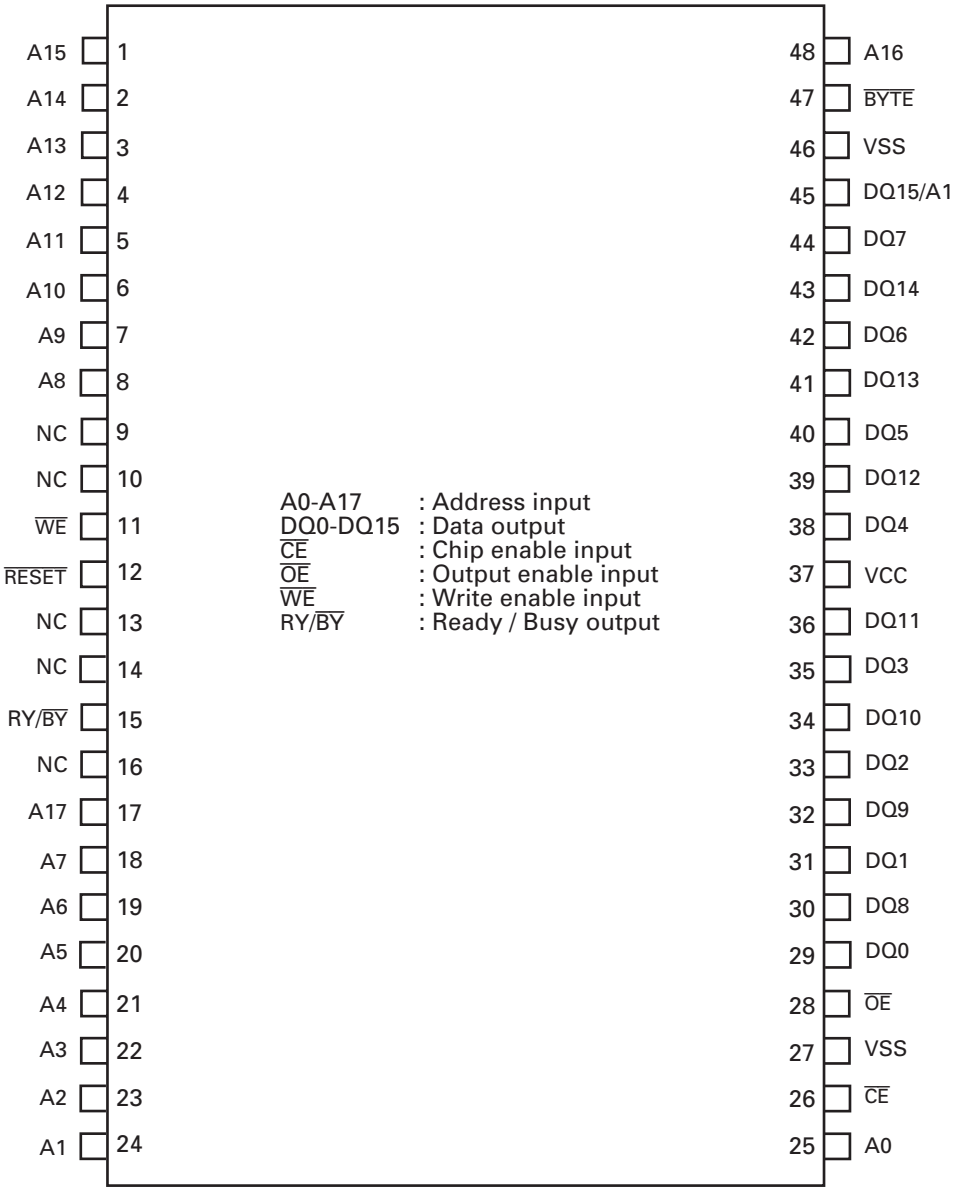
* PD8124A



* TC7WH32FK



* PD6468A



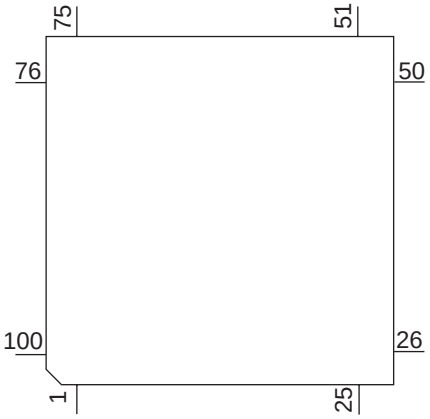
MC-Service

● Pin Functions(PE5423A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	AVREF			A power supply Positive power supply(5V)
2	AVSS			A power supply GND
3	RFOK	O	C	Output of state of RFOK
4	CLAMP	I	C	CLAMP SW sense input
5	EVDD			E power supply Positive power supply
6	PWM			For changer(PWM)
7	NC			Not used
8	IC/FLMD0			IC : VSS direct connection/FLMOD0 : Pull-down
9	VDD			Positive power supply(5V)
10	REGC			Connected to the capacity stabilizing output of the regulator
11	VSS			GND
12	X1	I		Oscillator connection for mainclock
13	X2			Oscillator connection for mainclock
14	$\overline{\text{RESET}}$	I		System reset input
15	XT1	I		Connected to the oscillator for subclock (connected to VSS via the resistor)
16	XT2			Connected to the oscillator for subclock(Open)
17	PULLDOWN	I		Connected to EVDD or EVSS via the resistor
18	$\overline{\text{EJSW}}$	I	C	Eject key input
19	$\overline{\text{XINT}}$		C	CD LSI interruption signal input
20	NC			Not used
21	$\overline{\text{BRST}}$	I		P-Bus reset input
22	BSI	I		P-Bus serial data input
23	BSO	O	C	P-Bus serial data output
24	$\overline{\text{BSCK}}$	I/O	/C	P-Bus serial clock input/output
25	FTXD	O	C	For flash rewriting(transmitted signal)
26	FRXD	I		For flash rewriting(received signal)
27	BRXEN	I/O	/C	It is possible to receive P-Bus
28	$\overline{\text{BSRQ}}$	I/O	/C	P-Bus service request demand
29	$\overline{\text{DSPOK}}$	I		DSP microcomputer initialization OK input
30	DSCSNS(S903)	I		Disc state sense input
31	8EJ(S905)	I		Input of detection of 8 cm disc ejection
32	12EJ(S904)	I		Input of detection of 12 cm disc ejection
33	EVSS			E power supply GND
34	EVDD			E power supply Positive power supply
35, 36	SRAMLEVEL0, 1	O	C	SRAM level meter output
37	EMPH	O	C	Emphasis information output
38	$\overline{\text{EMPH}}$	O	C	Emphasis information output
39-42	NC			Not used
43	$\overline{\text{ADENA}}$	O	C	A/D reference voltage supply control output
44	LRCKOK	O	C	(DOUT mute output)
45	SRAMLEVEL2	O	C	SRAM level meter output
46	CD3VON	O	C	CD +3.3V power supply control output
47	CONT	O	C	Servo driver power supply control output
48	$\overline{\text{XRST}}$	O	C	CD LSI reset control output
49	VDCONT	O	C	VD power supply control output
50	ROMDATA	I/O	/C	E2PROM data input/output
51	ROMCS	O	C	E2PROM chip selection output
52	ROMCK	O	C	E2PROM clock output
53	LOEJ	O	C	The direction change output of LOAD/EJECT
54	CLCONT	O	C	Driver input change output
55	CDMUTE	O	C	CD mute control output
56-58	INT			For changer(Interruption at the edge)
59	$\overline{\text{XCS}}$	O	C	CD LSI chip selection output
60	NC			Not used
61	$\overline{\text{XWAIT}}$	I		CD LSI write control signal output
62	CLKOUT	O	C	Internal system clock output(Open)
63	LOCK	I		Spindle lock input
64	NC			Not used
65	$\overline{\text{XWRITE}}$	O		CD LSI write control signal output

Pin No.	Pin Name	I/O	Format	Function and Operation
66	NC			Not used
67	$\overline{\text{XREAD}}$	O		CD LSI read control signal output
68	XASTB	O		CD LSI address strobe output
69	BVSS			B power supply GND
70	BVDD			B power supply Positive power supply
71-86	AD0-15	I/O	/C	Address/data Bus 0-15
87-90	NC			Not used
91-93	A/D			For changer(A/D)
94	$\overline{\text{CSENS}}$	I		Flap closing sense input
95	TYPE_A/D	I		CD-DA analog/digital output change setup
96	$\overline{\text{TESTIN}}$	I		Chip check test program starting input
97	HOME	I		Home SW sense input
98	TEMP			Temperature information sense input
99	VDSENS			VD power supply short sense input
100	NC			Not used

* PE5423A



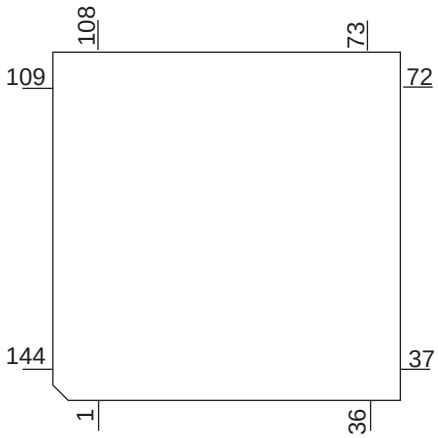
Format	Meaning
C	CMOS

● Pin Functions(UPD63761GJ)

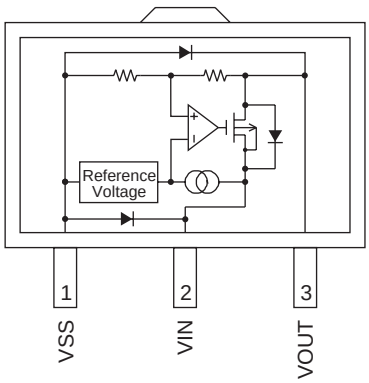
Pin No.	Pin Name	I/O	Function and Operation
1	D.VDD		Power supply for digital circuits
2	D1.GND		GND for 1.6V digital circuits
3	$\overline{\text{RESET}}$	I	Input of reset
4-8	AB12-8	I	Address bus 12-8 from the microcomputer
9-16	AD7-0	I/O	Address/data bus 7-0 to the microcomputer
17	$\overline{\text{CS}}$	I	Chip selection
18	ASTB	I	Address strobe
19	$\overline{\text{READ}}$	I	Control signals(read)
20	$\overline{\text{WRITE}}$	I	Control signals(write)
21	$\overline{\text{WAIT}}$	O	Control signals(wait)
22	INTQ	O	Interruption signals to the external microcomputer
23, 24	IFMODE0, 1	I	Switching the microcomputer I/F 0, 1
25	D1.VDD		Power supply for 1.6V digital circuits
26	DA.VDD		Power supply for DAC
27	ROUT	O	Output of audio for the right channel
28	DA.GND		GND for DAC
29	REGC		Connected to the capacitor for band gap
30	DA.GND		GND for DAC
31	LOUT	O	Output of audio for the left channel
32	DA.VDD		Power supply for DAC
33	X.VDD		Power supply for the crystal oscillator
34	XTAL	I	Connected to the crystal oscillator(16.9344MHz)
35	$\overline{\text{XTAL}}$	O	Connected to the crystal oscillator(16.9344MHz)
36	X.GND		Ground for the crystal oscillator
37	VDDREG15		Control of 1.6V regulator
38	PWMSW0	I	Setup 0 for PWM output(SD, MD)
39-41	TEST3-1	I	Connected to GND
42	PWMSW1	I	Setup 1 for PWM output(FD, TD)
43	TESTEN	I	Connected to GND
44	D1.GND		GND for 1.6V digital circuits
45	DIN	I	Input of audio data
46	DOUT	O	Output of audio data
47	SCKIN	I	Clock input for audio data
48	SCKO	O	Clock output for audio data
49	LRCKIN	I	Input of LRCK for audio data
50	LRCK	O	Output LRCK for audio data
51	$\overline{\text{XTALEN}}$	I	Permission to oscillate 16.9344MHz
52	D1.VDD		Power supply for 1.6V digital circuits
53	RFCK/HOLD	O	Output of RFCK/HOLD signal
54	WFCK/MIRR	O	Output of WFCK/MIRR signal
55	PLCK	O	Output of PLCK
56	LOCK/RFOK	O	Output of LRCK/Output of RFOK
57	C1D1/C8M	O	Information on error correction/C8M : 8MHz
58	C1D2/C16M	O	Information on error correction/C16M : 16MHz
59	C2D1/RMUTE	O	Information on error correction/Mute for Rch
60	C2D2/LMUTE	O	Information on error correction/Mute for Lch
61	C2D3/SHOCK	O	Information on error correction/Detection of vibration
62	D1.GND		GND for 1.6V digital circuits
63	C33M	O	Output of 33.8688MHz(CLK for SDRAM)
64	($\overline{\text{RCS}}$)	O	DRAM $\overline{\text{CS}}$
65	RA11	O	Output of DRAM address 11
66	(CKE)	O	Output of DRAM CKE
67	$\overline{\text{RAS}}$	O	Output of DRAM $\overline{\text{RAS}}$
68	$\overline{\text{CAS0}}$(LDQM)	O	Output of DRAM lower $\overline{\text{CAS}}$(LDQM)
69	$\overline{\text{CAS1}}$(UDQM)	O	Output of DRAM upper $\overline{\text{CAS}}$(UDQM)
70	$\overline{\text{WE}}$	O	Output of DRAM $\overline{\text{WE}}$
71	$\overline{\text{OE}}$($\overline{\text{CAS}}$)	O	Output of DRAM $\overline{\text{OE}}$($\overline{\text{CAS}}$)
72	D.GND		Ground for digital circuits
73-88	RDB0-15	I/O	Input/output of DRAM data0-15
89-99	RA0-10	O	Output of DRAM address0-10

Pin No.	Pin Name	I/O	Function and Operation
100	D.VDD		Power supply for digital circuits
101	FD+	O	Output of focus drive PWM +
102	FD-	O	Output of focus drive PWM -
103	TD+	O	Output of tracking drive PWM +
104	TD-	O	Output of tracking drive PWM -
105	SD+	O	Output of thread drive PWM +
106	SD-	O	Output of thread drive PWM -
107	MD+	O	Output of spindle drive PWM +
108	MD-	O	Output of spindle drive PWM -
109	REFOUTSV	O	REFOUT for servo
110	AD.VDD		Power supply for ADC
111	EFM	O	Output of EFM signals
112	ASY	I	Input of asymmetry
113	ATEST	O	Analog tests
114	RFI	I	Input of RF
115	AD.GND		Ground for the analog system
116	AGCO	O	Output of RF
117	C3T	O	Connection to the capacitor for detecting 3T
118	AGCI	I	Input of AGC
119	RFO	O	Output of RF(AGC)
120, 121	EQ2, 1	I	Equalizer 2, 1
122	RF2-	I	Reversal input of RF2
123	RF-	I	Reversal input of RF
124	A.GND		Ground for the analog system
125	A	I	Input of A
126	C	I	Input of C
127	B	I	Input of B
128	D	I	Input of D
129	F	I	Input of F
130	E	I	Input of E
131	VREFIN	I	Input of reference voltage
132	A.VDD		Power supply for the analog system
133	REFOUT	O	Output of reference voltage
134	REFC	I	Connected to the capacitor for output of REFOUT
135	FE-	I	Reversal input of FE
136	FEO	O	Output of FE
137	ADIN	I	Input of FE, TE A/D converter
138	TE-	I	Reversal input of TE
139	TEO	O	Output of TE
140	TE2	O	TE2
141	TEC	I	TEC
142	LD	O	Output of LD
143	PD	I	Input of PD
144	D.GND		Ground for digital circuits

* UPD63761GJ



* S-812C33AUA-C2N

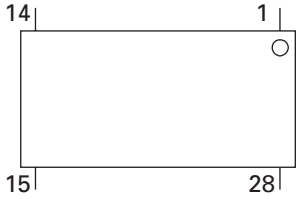


MC-Service

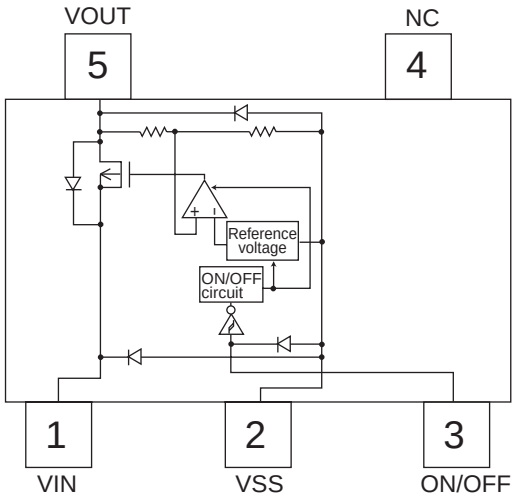
● Pin Functions(BA5835FM)

Pin No.	Pin Name	Function and Operation
1	VR	Input pin for reference voltage
2	OPIN2(+)	Input pin for non-inverting input for CH2 preamplifier
3	OPIN2(-)	Input pin for inverting input for CH2 preamplifier
4	OPOUT2	Output pin for CH2 preamplifier
5	OPIN1(+)	Input pin for non-inverting input for CH1 preamplifier
6	OPIN1(-)	Input pin for inverting input from CH1 preamplifier
7	OPOUT1	Output pin for CH1 preamplifier
8	GND	Ground pin
9	MUTE	Mute control pin
10	POWVCC1	Power supply pin for CH1, CH2, and CH3 at "Power" stage
11	VO1(-)	Driver CH1 - Negative output
12	VO1(+)	Driver CH2 - Positive output
13	VO2(-)	Driver CH2 - Negative output
14	VO2(+)	Driver CH2 - Positive output
15	VO3(+)	Driver CH2 - Positive output
16	VO3(-)	Driver CH2 - Negative output
17	VO4(+)	Driver CH4 - Positive output
18	VO4(-)	Driver CH4 - Negative output
19	POWVCC2	Power supply pin for CH4 at "Power" stage
20	GND	Ground pin
21	CNT	Control pin
22	LDIN	Loading input
23	OPOUTSL	Output pin for preamplifier for thread
24	OPINLSL	Input pin for preamplifier for thread
25	OPOUT3	CH3 preamplifier output pin
26	OPIN3(-)	Input pin for inverting input for CH3 preamplifier
27	OPIN3(+)	Input pin for non-inverting input for CH3 preamplifier
28	PREVCC	PreVcc

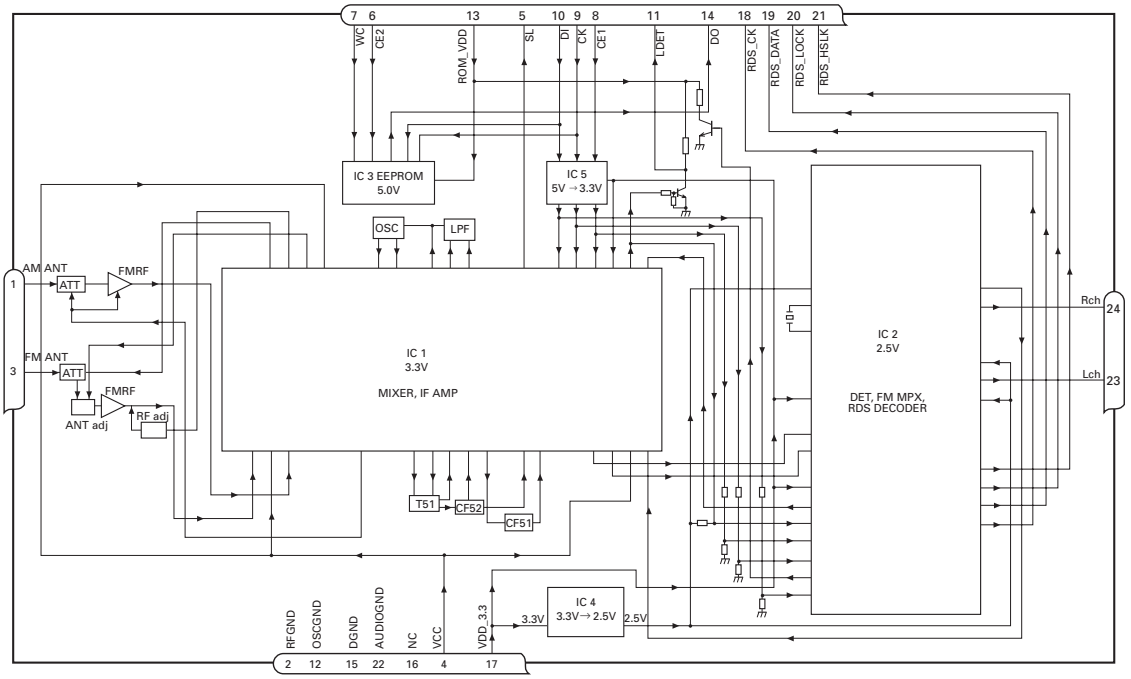
BA5835FM



* S-L2980A15MC-C6A

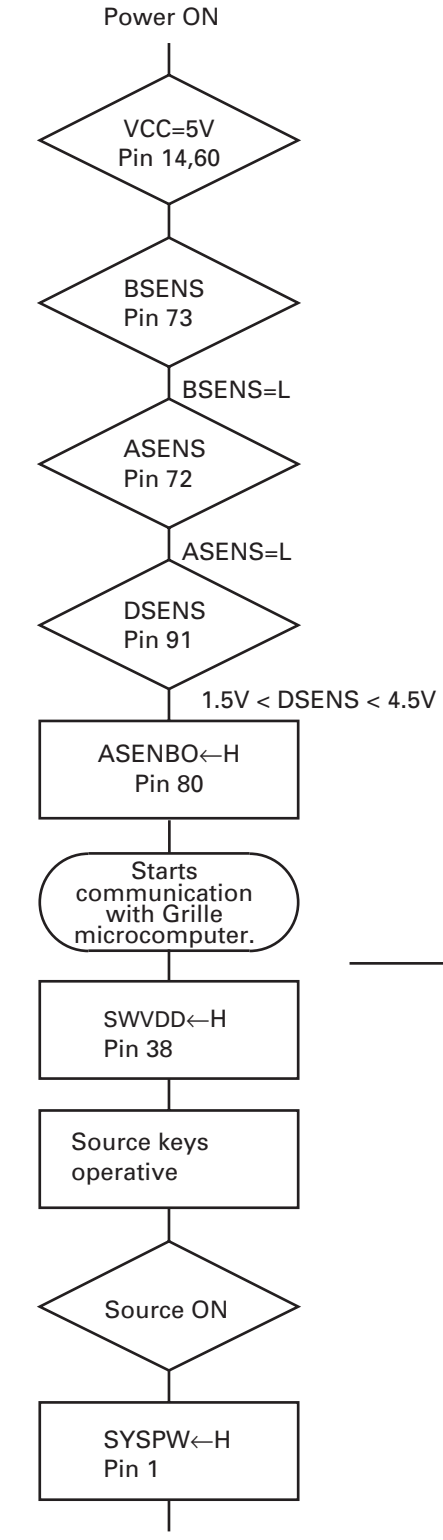


● FM/AM Tuner Unit

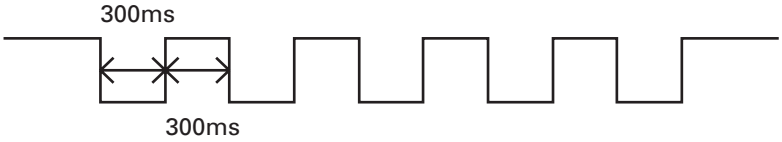


No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7μH. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75Ω Surge absorber(DSP-201M-S00B) is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4V ± 0.3V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM "Low" active
7	WC	I	write control	You can write EEPROM, when EEPROM write control is "Low". Ordinary non connection
8	CE1	I	chip enable-1	Chip enable for AF•RF "High" active
9	CK	I	clock	Clock
10	DI	I	data in	Data input
11	LDET	O	lock detector	"Low" active
12	OSCGND		osc ground	Ground of oscillator block
13	ROM_VDD		power supply	Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out	Data output
15	DGND		digital ground	Ground of digital block
16	NC		non connection	Not used
17	VDD_3.3		power supply	The power supply for digital block. 3.3V ± 0.2V
18	RDS_CK	O	RDS clock	Output of RDS clock(2.5V)
19	RDS_DATA	O	RDS data	Output of RDS data(2.5V)
20	RDS_LOCK	O	RDS lock	Output unit "High" active(2.5V) (RDS_LOCK turns over by the external transistor. "Low" active)
21	RDS_HSLK	O	RDS high speed lock	Output unit "High" active(2.5V)(RDS_HSLK turns over by the external transistor. "Low" active)
22	AUDIOGND		audio ground	Ground of audio block
23	L ch	O	L channel output	FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output	FM stereo "R-ch" signal output or AM audio output

7.3 OPERATIONAL FLOW CHART



Completes power-on operation.
(After that, proceed to each source operation)



In case of the above signal, the communication with Grille microcomputer may fail.
If the time interval is not 300msec, the oscillator may be defective.

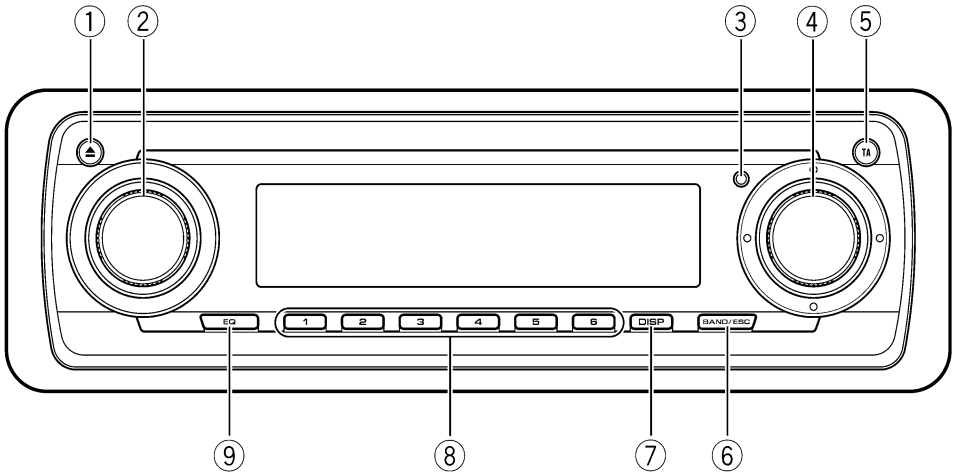
7.4 CLEANING

Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Portions to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

8. OPERATIONS



Head unit

① **EJECT button**
Press to eject a CD from your built-in CD player.
Press and hold to open or close the front panel.

② **SOURCE button, VOLUME**
This unit is turned on by selecting a source.
Press to cycle through all the available sources.
Rotate it to increase or decrease the volume.

③ **RESET button**
Press to return to the factory settings (initial settings).

④ **MULTI-CONTROL**
Push up, down, left or right to do manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.

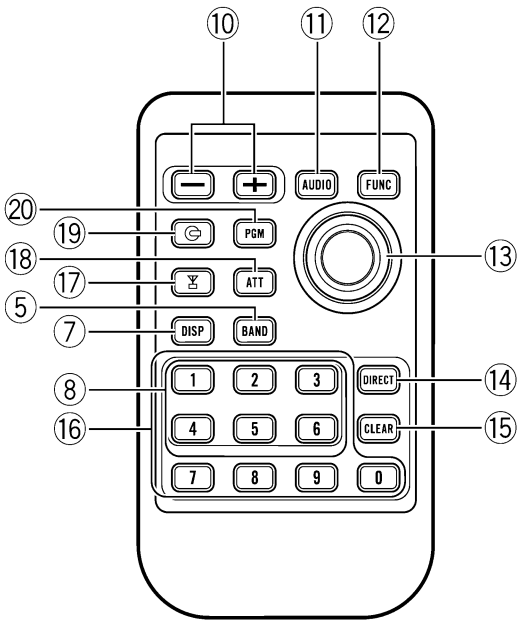
⑤ **TA button**
Press to turn traffic announcements function on or off.
Press and hold to turn NEWS function on or off.

⑥ **BAND/ESC button**
Press to select among three FM bands and MW/LW bands and to cancel the control mode of functions.

⑦ **DISPLAY button**
Press to select different displays.

⑧ **1–6 buttons**
Press for preset tuning and disc number search when using a multi-CD player.

⑨ **EQ button**
Press to select various equalizer curves. ▣



Remote control

Operation is the same as when using the buttons on the head unit.

⑩ VOLUME buttons
Press to increase or decrease the volume.

⑪ AUDIO button
Press to select various sound quality controls.

⑫ FUNCTION button
Press to select functions.

⑬ Joystick
Move to do manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.
- You can perform same operation as **MULTI-CONTROL** on the head unit, except the turning operation.

⑭ DIRECT button
Press to directly select the desired track.

⑮ CLEAR button
Press to cancel the input number when **0–9** are used.

⑯ 0–9 buttons
Press to directly select the desired track, preset tuning or disc. Buttons **1–6** can operate the preset tuning for the tuner or disc number search for the multi-CD player.

⑰ TUNER button
Press to select the tuner as the source.

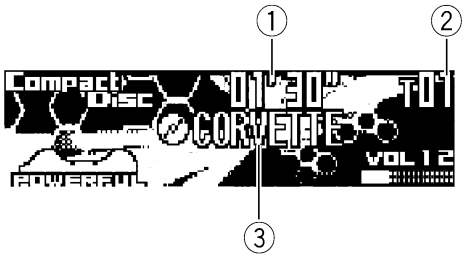
⑱ ATT button
Press to quickly lower the volume level, by about 90%. Press once more to return to the original volume level.

⑲ CD button
Press to select the built-in or multi-CD player as the source.

⑳ PGM button
Press to operate the preprogrammed functions for each source. ▣

MC-Service

Playing a CD



These are the basic steps necessary to play a CD with your built-in CD player.

① **Play time indicator**
Shows the elapsed playing time of the current track.

② **Track number indicator**
Shows the track currently playing.

③ **Disc title indicator**
Shows the title of the currently playing disc.
- If no title has been entered for the currently playing disc, nothing is displayed.

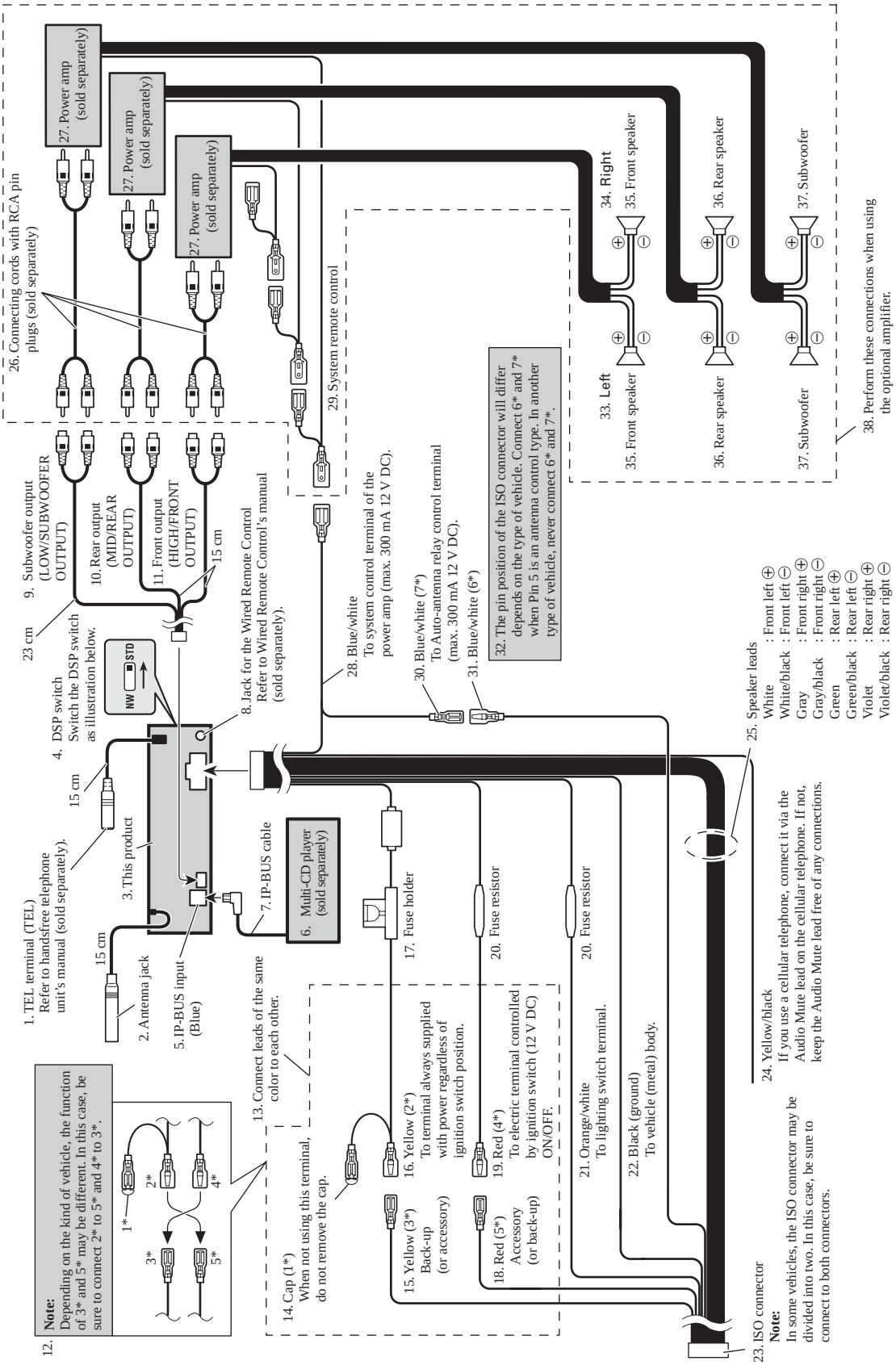
1 Press SOURCE to select the built-in CD player.
Press **SOURCE** until you see **Compact Disc** displayed.
- If no disc is loaded in the unit, you cannot select **Compact Disc** (built-in CD player). Insert a disc in the unit.

2 To perform fast forward or reverse, push and hold MULTI-CONTROL left or right.
- If you select **ROUGH**, pushing and holding **MULTI-CONTROL** left or right enables you to search every 10 tracks in the current disc.

3 To skip back or forward to another track, push MULTI-CONTROL left or right.
Pushing **MULTI-CONTROL** right skips to the start of the next track. Pushing **MULTI-CONTROL** left once skips to the start of the current track. Pushing again will skip to the previous track.

Note
When a disc is inserted, the disc and track titles automatically begin to scroll in the display. When Ever Scroll is set to ON at the initial setting, the disc and track titles scroll continuously. ▣

● CONNECTION DIAGRAM


1. TEL terminal (TEL)
Refer to handsfree telephone unit's manual (sold separately).
2. Antenna jack
3. This product
4. DSP switch
Switch the DSP switch as illustration below.
NW
STD
5. IP-BUS input (Blue)
6. Multi-CD player (sold separately)
7. IP-BUS cable
8. Jack for the Wired Remote Control
Refer to Wired Remote Control's manual (sold separately).
9. Subwoofer output (LOW/SUBWOOFER OUTPUT)
10. Rear output (MID/REAR OUTPUT)
11. Front output (HIGH/FRONT OUTPUT)
12. Note:
Depending on the kind of vehicle, the function of 3* and 5* may be different. In this case, be sure to connect 2* to 5* and 4* to 3*.
1*
2*
3*
4*
5*
13. Connect leads of the same color to each other.
14. Cap (1*)
When not using this terminal, do not remove the cap.
15. Yellow (3*)
Back-up
(or accessory)
16. Yellow (2*)
To terminal always supplied with power regardless of ignition switch position.
17. Fuse holder
18. Red (5*)
Accessory
(or back-up)
19. Red (4*)
To electric terminal controlled by ignition switch (12 V DC)
ON/OFF.
20. Fuse resistor
20. Fuse resistor
21. Orange/white
To lighting switch terminal.
22. Black (ground)
To vehicle (metal) body.
23. ISO connector
Note:
In some vehicles, the ISO connector may be divided into two. In this case, be sure to connect to both connectors.
24. Yellow/black
If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
25. Speaker leads
White : Front left ⊕
White/black : Front left ⊖
Gray : Front right ⊕
Gray/black : Front right ⊖
Green : Rear left ⊕
Green/black : Rear left ⊖
Violet : Rear right ⊕
Violet/black : Rear right ⊖
26. Connecting cords with RCA pin plugs (sold separately)
27. Power amp (sold separately)
27. Power amp (sold separately)
27. Power amp (sold separately)
28. Blue/white
To system control terminal of the power amp (max. 300 mA 12 V DC).
29. System remote control
30. Blue/white (7*)
To Auto-antenna relay control terminal (max. 300 mA 12 V DC).
31. Blue/white (6*)
32. The pin position of the ISO connector will differ depends on the type of vehicle. Connect 6* and 7* when Pin 5 is an antenna control type. In another type of vehicle, never connect 6* and 7*.
33. Left
34. Right
35. Front speaker
35. Front speaker
36. Rear speaker
36. Rear speaker
37. Subwoofer
37. Subwoofer
38. Perform these connections when using the optional amplifier.
23 cm
15 cm
15 cm
15 cm

A

B

C

D

E

F

● Jigs List

Name	Jig No.	Remarks
Test Disc	TCD-782	Checking the grating
L.P.F.		Checking the grating (Two pieces)
Extension Cable	GGD1160	Checking the keyboard unit
Extension PCB	GGD1378	Checking the keyboard unit
CD-ROM	GGV1168	OEL screensaver studio lka to lkd application
Cleaning liquid	GEM1004	Cleaning CD pickup lenses
Cleaning paper	GED-008	Cleaning CD pickup lenses